



CITY OF
HAYWARD
HEART OF THE BAY

**COUNCIL TECHNOLOGY
APPLICATION COMMITTEE
APRIL 15, 2015**

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**CITY COUNCIL TECHNOLOGY APPLICATION COMMITTEE MEETING
WEDNESDAY, APRIL 15, 2015
CONFERENCE ROOM 4A 4:30 P.M. – 6:00 P.M.**

CALL TO ORDER

ROLL CALL

PUBLIC COMMENTS: *(The Public Comment section provides an opportunity to address the City Council Committee on items not listed on the agenda. The Committee welcomes your comments and requests that speakers present their remarks in a respectful manner, within established time limits, and focus on issues which directly affect the City or are within the jurisdiction of the City. As the Committee is prohibited by State law from discussing items not listed on the agenda, your item will be taken under consideration and may be referred to staff.)*

1. Approval of Minutes of February 18, 2015
[Minutes](#)
2. Network Infrastructure Replacement Project Recommendation
[Staff Report](#)
3. Information Technology Future Direction
[Staff Report](#)
4. Staff and Committee Member Status Reports/Updates
5. Review Future Agenda Items
[Staff Report](#)

COMMITTEE MEMBER ANNOUNCEMENTS AND REFERRALS

ADJOURNMENT

NEXT REGULAR MEETING – TIME, DAY, DATE

****Materials related to an item on the agenda submitted to the Council after distribution of the agenda packet are available for public inspection in the City Clerk's Office, City Hall, 777 B Street, 4th Floor, Hayward, during normal business hours. An online version of this agenda and staff reports are available on the City's website.*

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Council Technology Application Committee (CTAC)

Meeting Minutes of February 18, 2015

Members Present: Al Mendall, Sara Lamnin, Elisa Marquez

Staff: Mark Guenther, Kelly McAdoo, Frank Holland, Nathaniel Roush

Guests: None

Public Comments: None

1. Approval of Minutes:

Minutes of November 19, 2014 Approved

2. Enterprise Resource Planning (ERP) System Update

Information Technology Director Mark Guenther updated the Committee on the success of the Munis Payroll module implementation, especially the Employee Service (ESS) online component, and reported that the City went live with Payroll effective with the first payroll in 2015 which occurred on January 2, 2015. There have been a few process hiccups, but Payroll and Finance are on top of it and working on it.

The first batch of utility bills was mailed out in September 2014, since then the process was going slow and they were 7 weeks behind. Temporary staff was assigned and now they're currently only 3-4 weeks behind; we expect to be fully caught up next month. The Utility billing schedule will remain the same. The customers are able to pay their bills online, and accrual of late fees has been suspended. The number of days before a bill is considered late will be the same as before and staff has adjusted the collection schedule accordingly. The Hayward Self Service module for Utility billing has 11,000 users that have signed up and linked their Utility accounts. As a comparison, previously in the old system, we had 15,000 active users, so it looks like people that were using the old online system got onto the new system. This is one indication of success. Our customers can pay with a debit card online; we will need to check if there is a debit card convenience fee. There is a convenience fee charged if a credit card is used; this is to recover our costs for processing a credit card and the City doesn't make any money on fees. There is also the facility to setup an auto pay if they wanted to do that. We're also checking to see if there is an option to pay by e-check or ACH. While there are fewer customers using the online system, it may be because it takes a while for people to get used to the new system. Once billing is back on schedule in a couple of months and fully implemented, we'll look at those numbers again.

The Work Orders right now are primarily being used in conjunction with the Permit module to track, developer deposits, this is the way Munis does it and is working well. Maintenance Services is still working on configuring it for service requests and work order processing for internal staff. We're checking into the timeline for this to be complete. Permits also went live, and we have discovered that the online method for the contractor to schedule multiple inspections at the same property is not very efficient and some are unhappy. Tyler has written a modification

specification and we are pressing the vendor to fix their product. It was designed with a one off inspection scheduling in mind and it just doesn't work well, not even as well as the system we just replaced. It's just one of those things we didn't see until we went live. I think the Building Department is doing an excellent job of reaching out to those contractors and just telling them to call the number and they will take the requests over phone, so, they're not inconvenienced. Currently, the application for new permits online has not been activated yet. At go-live the goal was to duplicate the functions that we had in our old system, but, it's coming.

The Business License module went live last August 2014, customers are being billed through the new system, but, they can't pay online yet. They're currently configuring the system to pay online and they anticipate the online pay system to be implemented in 2015.

The Hayward Self Service module is turned on for these modules and one more module to be turned on is the Vendor Self Service module. This will allow vendors to register and see the status of purchase orders and payments online. That's all there, but, it just hasn't been turned on yet because it needs to be configured by the Finance Department.

Some minor additional funding was requested as part of the Capital Improvement Program (CIP) budget process to cover some of these potential modifications to the online system. It's just a place holder at this time. These are all the modules that remain outstanding, the latest implementation for the Business License module we believe will be done by 2015 which is the additional pieces of online permitting and Business Licenses. There is also Phase II for the Human Resources module that has not been completed yet, which is really just internal.

There was a discussion on how well employees received the new system and how they access their information. It has been well received by employees and payroll staff as well. The gate keepers learned the new procedures and they have a fall back person for back-up. The login to access the system is the employee's first name-dot-last name and their network password. If someone forgets their password, they should contact the I.T. Department Help Desk and there is a procedure to reset your Windows password. The Fire Department continues to use the Telestaff System to keep their schedule and when it's finalized, the Battalion Chief confirms the employees scheduled time was actual work time and the information then gets exported to Munis.

3. Social Media Presence Update

Community and Relations Officer Frank Holland gave a broad overview of the program, where we are going with social media, and where the City was one year ago. After one year, the City went from 220 to 1,990 users on Facebook and from 1,080 to 1,900 followers on Twitter. The City Clerk is very active in posting blogs. Currently, the City has 700 followers on LinkedIn and is doing well. YouTube is tremendously influential as a network on its own for people that are sharing videos. This is exciting because this is something that is already in the works. There was discussion regarding when the new website gets off the ground, there will be a lot more information available to see. As part of a Request for Proposal (RFP) that will be going out for a new agenda management system, one component includes a streaming video solution and video broadcasting. The City is currently on Instagram, YouTube, Twitter, Facebook, and LinkedIn.

The electronic Hayward Digest will be delivered biweekly and will include more YouTube videos in the future. We usually try to include at least one piece of video content in each one and the video is so popular it can almost be irrelevant to the top story.

A discussion on tips for Mayor and Council and how they navigate social media may be discussed at a future work session.

Information Technology Director Mark Guenther updated the Committee on the rebuilding of the Technology in the Council Chambers. It's an I.T. function and we're going to be consulting with our Community and Relations Officer Frank Holland and looking to get an RFP out on the street. Right now we are finishing up gathering all the requirements for it and looking to get an RFP out by the end of the month.

Community and Relations Officer Frank Holland discussed the state of the art equipment at Chabot College that the City purchased for them. The equipment is available to us, but there is a cost to hire people to run it.

4. Staff and Committee Member Status Reports/Updates

Information Technology Director Mark Guenther updated the Committee on the project to improve the connectivity in Fire vehicles. We have three Fire Engines that have the new in-motion gateways installed and they're performing very well. It was suggested by the in-motion vendor, Definitive Network, Inc. (DNI) that we pilot test the Panasonic Tough Pads to replace the old Panasonic Tough Book computers. We did do pilot testing and they performed very well. Installation of the gateways has been delayed because as soon as we were getting ready to purchase the new Tough Pads, Panasonic announced there is a newer version and we decided to wait for that. We then have had with our preferred supplier getting the correct mounts to actually mount them in the Fire vehicles, so, there has been a delay there as well. We are pressing the vendor to get this moving. In a conversation with the Fire Chief, he relayed to me that he is pleased with the direction that we're moving in and he knows we're moving forward and we all agree that this is the best solution for the Fire Department. Because of the type of delays, there is currently no ETA for completion of this project.

The Network Infrastructure Refresh Project to replace all of the routers and switches which are about 8 years old has started with an RFP out on the street, we are hoping to complete our evaluation of the responses we get by the beginning of April and I'm looking to bring a recommendation to this Committee at the next meeting on April 15th.

There was a discussion regarding the Council Chamber Technology upgrade, we're still working on the requirements definition for that. We received direction from City Manager on the Council Chambers Technology upgrade for the FY2016 budget and we'll release the RFP in late May or June. There will be an opportunity to get the work done in August. This is an extensive project and it may not be able to get everything done in August.

Both the RFP's the technology upgrade and the agenda management system regarding the voting system will be written with flexibility. They are still working on the agenda management system. RFP.

Community and Relations Officer Frank Holland gave the Committee an update on the Website redesign. The vendor has already met with representatives from every department, identified the key people and their needs. Currently in Phase I of the content inventory process with our Webmaster, Joe Ochinerio.

The Committee had a discussion on the replacement of the acoustics in the Rotunda. This is a bigger project and will be part of Facilities budget, the Technology part is a very small piece of it.

This should be considered to ensure that when building the new library, we don't run into the same issues as the Rotunda with the acoustics.

There was discussion on the topic of High Speed Hayward regarding a presentation that was given at the Economic Development Committee meeting. The item should be on the CTAC Future Topic list. There is not a lot to update at this time. The City is currently working with private entities to see what they're willing to offer and what they have. The topic will be added as a standing item on the agenda.

5. Suggestions for Future Topics

- Recommendation for the Network Infrastructure Project
- High Speed Hayward
- Making the Organization More Nimble
- Staffing Report for Information Technology
- Staffing changes in organization

Member comments: none

Next Meeting: April 15th @ 4:30pm

Meeting adjourned at 5:54pm



DATE: April 15, 2015

TO: Council Technology Application Committee

FROM: Director of Information Technology

SUBJECT: Network Infrastructure Replacement Project Recommendation

RECOMMENDATION

That the Committee reviews and comments on this report.

BACKGROUND

The City has an extensive and complex data/voice network that supports every department and provides computer and telephony systems functionality throughout the enterprise. The existing network infrastructure was last upgraded in 2007. The current system has had various segments and components updated over time but a total upgrade is now necessary. This “forklift” upgrade will position the City for the future and allow for a more stable and flexible system.

DISCUSSION

The purpose of the infrastructure upgrade is to enhance and strengthen our network capabilities to support both data and telephony systems as well as the future network needs of the City. The strengthened network will be more capable of handling voice, video, and data requirements over one heterogeneous (converged) network throughout the enterprise. This upgrade brings together telephone services, data services, and the power of the Internet in a single high-speed, stable, and expandable network, which will serve as the foundation for future expansion of the City’s technology systems.

Information Technology Department staff undertook a systematic process to identify Network Infrastructure system manufacturers considered to be the industry leaders. Factors such as product performance, years of industry experience, resource commitments and recommendations from similar vertical market peer groups were used as benchmarks in a pre-qualification process.

On February 9, 2015 the City issued a Request for Proposal (RFP) to qualified companies to design, install and configure a complete Network Infrastructure system. A mandatory pre-bid conference was held on February 23, 2015, and seven qualified vendors attended.

In accordance with the instructions and specifications contained within the RFP, the selected proposers were required to design, equip, implement and provide systems administrator training for a lump sum purchase price, with lease/purchase options. The City sought a network infrastructure system that will provide the most cost effective, technologically advanced solution.

The RFP also required that any proposed system accommodate the current and future network requirements of all City operations, employees, and systems. Additionally, the new system must provide City personnel and operations with an advanced data/voice system that is 99.999% reliable, is able to support their public service, health & safety missions, emergency services, and expedited disaster recovery situations.

The City received two responses to the RFP by the March 27, 2015 deadline. Of the two responses, only one response was deemed fully qualified to meet the requirements. The two responding vendors were SmartWave and LookingPoint. Both vendors attended the mandatory pre-bid conference.

The SmartWave proposal included replacement of existing network equipment only, and not the required redesign requested in the RFP, thus not planning for future needs. It also omitted responses to questions regarding voice network compatibility, stating that this was not a voice network, which is incorrect. Finally, all references supplied were for single-building installations which are not comparable to our current network.

The LookingPoint proposal met the requirement to redesign the network, planning for future needs, and included all features and functions requested. LookingPoint supplied the required references for comparable governmental organizations.

FISCAL IMPACT

The FY 2015 – FY 2024 Capital Improvement Program includes project funding totaling \$2.1 million over 5 years. The pricing of both proposals is within the budgeted amount.

RFP Evaluation Results		
Vendor	Qualified Bid	Total Pricing
LookingPoint	Yes	\$1,626,899.26
SmartWave	No	\$ 784,876.08

NEXT STEPS

Staff will recommend that Council authorize the City Manager to negotiate and execute an agreement with LookingPoint to design, install and configure a complete network infrastructure system. The overall costs for all components of the infrastructure upgrade will be dependent upon final vendor negotiations. It is anticipated that the final total cost will not exceed \$1.7 million. This amount will be refined in the final contract negotiation phase. Staff will also recommend pursuing a lease/purchase option at a competitive rate which allows expenditures to be spread over five years.

If approved, project kickoff would commence in June, 2015 with an anticipated go-live date of November 2015.

Prepared by: Carolyn Saputo, Network Systems Specialist

Recommended by: Mark Guenther, Acting Information Technology Director

Approved by:



Fran David, City Manager



DATE: April 15, 2015
TO: Council Technology Application Committee
FROM: Information Technology Director
SUBJECT: Information Technology Future Direction

RECOMMENDATION

That the Committee reviews and comments on this report.

BACKGROUND

At the Committee's November 2014 meeting, the long-term goal of enabling both the IT department and the organization as a whole to implement new technologies on a more continuous and rapid basis was introduced. This report addresses current technology trends that can assist in meeting this goal, as well as project workload and staffing elements that should be considered as the conversation regarding developing a long term plan to meet this goal begins.

DISCUSSION

Technology Trends

The technology industry continues to undergo rapidly accelerating change. The following discussion of trends and issues in technology, as well as the City's use of technology, provides context for understanding the direction and resources that may be needed. What also becomes apparent is how many of these trends are complementary and inter-related.

Consumerization of IT/Mobility/Enterprise Mobility

The most prominent and overarching trend in the technology space today is commonly referred to as the "Consumerization of IT." The proliferation of relatively inexpensive smartphones and tablets has dramatically altered the landscape and expectations of the end user experience, the amount of self-service online access, and both the capability and capacity of those online services to meet the needs of residents, businesses and employees. This is having wide ranging effects on technology implementations ranging from responsive design requirements of websites to interfaces with back office enterprise systems that provide and receive transactional data from the mobile enabled online systems.

While IT departments in both government and private industry have struggled to keep up with rising demand and expectations from employees for secure access to email, calendar, and other enterprise applications and data from these devices (often referred to as "mobility" or "enterprise mobility"),

the ultimate effect of the rapid acceleration of the consumerization of IT is far wider and more pervasive.

The end result of this revolution will likely change the way government provides many services in much the same way that software has changed the television, hotel, transportation, retail banking and credit card industries of today. Services provided by entities such as Netflix, Hulu, AirBnB, Homeway, ApplePay, Uber and Lyft have dramatically and drastically changed these industries forever. And why not government services? In its report entitled “Government 2020,” Deloitte University Press summarized its research and provides a vision of this future. It describes the “consumerization of public services” that most certainly will result from the proliferation of these private technology-based services generating the expectation for similar public services.

This trend is already well established in transportation (Uber, Lyft, and websites such as Bart.gov and SFMTA.gov), education (nearly every major university offers online courses) and healthcare (Kaiser Permanente’s kp.org). In government, the shift can be just as dramatic. The driving force is the idea that technology-enabled self service shifts the work of providing many basic services from government staff members to residents and businesses wielding technology. Online access to requesting service and helping constituents solve their own problems allows valuable city staff time to be devoted toward service requests and questions that actually require their particular expertise. Self-service online and mobile apps integrated with back office enterprise systems must streamline and automate tasks such as payments, business license renewals, permit issuance, routine crime reporting and many others.

Consumerization trends similar to those that are driving changes in other areas of service delivery are affecting the technology utilized for placing calls for service to our Communications Center for Fire and Police response. One industry trend, known as Next Generation 9-1-1 (NG9-1-1), includes the ability to make Text to 9-1-1 requests for service. While industry associations such as the Association of Public Safety Communications Officials (APCO) have stated the position that phone conversations are the best method of communication between callers and emergency communication operators, the ability to handle text messages to 9-1-1 dispatchers will most certainly become a reality in the near future. According to the National Emergency Number Association (NENA), NG9-1-1 planning efforts are underway in 39 states.

Another related trend addresses wireless communication from the central dispatch server to mobile data computers (MDCs), and to other devices which is also slated for change when the nationwide FirstNet public-safety-only dedicated highspeed wireless broadband network is built. This large scale state and federal government technical project is projected to be fully operational by 2022.

Taken to the radical extreme is the idea of “government as a food truck.” Government services go completely mobile, digitizing as many services as possible, with a mobile first standard for introducing new online services. Like the food truck revolution, most services requiring face-to-face contact are available via mobile government units, dispersed geographically on a regularly scheduled basis in a walkable city comprised of livable and sustainable neighborhoods.

If the City were to fully embrace a completely mobile, digitized service delivery model, it could underscore and enhance its related initiative to realize the Technology and Innovation Corridor. A city-owned innovation center, hosting hack-a-thons that allow the public to collaborate with city staff utilizing open data to develop innovative public service applications, while serving as a stop for its mobile government units, could provide a public example of technology innovation in Hayward. Through these initiatives, the City could demonstrate that it is willing to take measured risks by investing resources in support of the innovation cycle.

Open Data/Open Government/Transparency

Following on the concept of allowing constituents access to systems and data that enable them to solve their own problems and/or answer their own questions, Open Data refers to direct online access to government or public data over the internet either through applications that provide that data either in its raw format, or in a format that is easily understandable by the average constituent. Millions of government datasets have been opened to the public. Some data is provided via an application programming interface (API) which allows software developers to use the data in applications they develop, such as in the plethora of apps that provide information to transit riders about when the next bus will arrive. Other open government applications allow the public to search through city data such as vendor payment and employee salary records, driving transparency from the bottom up by allowing individuals immediate access to important internal data.

Constituent Engagement

Constituent Engagement applications allow constituents to make general comments or directly comment on pending policy, development or other proposals electronically. These online “public meetings” can be a more convenient and accessible way for the public to get information and make comments for staff and policymaker review. For example, if comments on the placement or design of a public playground were sought, concerned residents with young children might be the segment of the public most affected. These same residents might be least likely to attend a public meeting due to competing demands of work, home and childcare. Providing online access may increase participation by those directly affected.

Cloud Services/Software-as-a-Service (SAAS)

There has been lots of attention in the press and media advertising about cloud technology (“elevate your business phone system into the cloud”). While there are many definitions of “the cloud,” what it basically means is that data storage and software moves to external resources accessible on the internet, usually via a web browser. Similarly, Software-as-a-Service (SAAS) refers to the provision of application software systems accessible over the internet, usually via a web browser. There are many benefits to utilizing this new technology, such as avoiding the need for large capital purchases of hardware and software. These costs shift, however, to annual operating costs in the form of annual subscription fees, which can more accurately represent the true ongoing costs of new projects implemented using “the cloud.”

Security/Cyber Security

The many recent and highly publicized incidents of cyber security breaches serve to highlight the importance of increased attention placed on the security of IT resources. As more and more IT resources are made accessible online, the risk of security breaches grows. Network firewalls and

anti-virus/anti-malware software must be continually kept up-to-date to remain effective. Logs created by these systems must be continually reviewed in order to detect and avoid potential problems. Risks posed by internal staff actions must be mitigated as well.

Business Resiliency/Continuity/Disaster Recovery

The need to create and store a backup copy of critical data to be used in case a storage device fails is a commonly recognized IT necessity. About twenty years ago, this concept of disaster recovery evolved into the more robust concept of business continuity by adding the concept of recovering from not only a computer device failure but perhaps from wider devastation of a data center or building. Business resilience broadens this topic to include the rapid resumption of business activities tied to that computer system/data center/building/institution. In a consumerized IT environment where 24/7/365 mobile access to systems is expected, availability, recovery, and security concerns have merged and must be considered when planning a resilient business technology infrastructure.

Virtualization

Servers are central computer systems, typically in a data center, that can be accessed from other remote computer systems, such as the PC in an office. This concept began in the earliest days of mainframe computers, which stored a single copy of an organization's data that could be updated and accessed by multiple users at once. Server Virtualization refers to the concept of consolidating and running many different servers on a single "super server," rather than on individual server computers. While not a new concept (mainframes were broken up into smaller servers, which are now being consolidated back into larger servers), it gained popularity for Microsoft Windows Servers in the late 1990's, and is worth mentioning here because it is an enabling technology for many of the trends and issues noted previously. If this concept sounds familiar, it is because it is the on-premise equivalent of cloud storage technology.

Agile Development/Agile Operations/Agile DevOps

The best way to describe Agile Development is by quoting the Manifesto for Agile Software Development, published in 2001 by a group of software professionals. "...we have come to value individuals and interactions over processes and tools; working software over comprehensive documentation; customer collaboration over contract negotiation; and responding to change over following a plan." This method and idea for developing software more rapidly, requires the participation of Agile Operations, which are the operational staff resources that are capable and willing to work directly with software developers to build and use applications quickly.

While municipal governments have largely done away with in-house development of computer applications in favor of software packages available commercially, these packages do require extensive configuration and testing by operational staff familiar with the business operations and rules that must be configured into the software. The concept of Agile DevOps pertains in this case to the organization's ability to create a shared culture and process that combines traditional IT staff resources used to implement such systems with the operational staff possessing the appropriate knowledge, skills, abilities, and *aptitudes* to enable such projects to be implemented more regularly and rapidly.

The City's Current and Future Use of Technology

The City's decisions regarding technology purchases and implementations do not occur in a vacuum, and are informed by then current technology trends. As a result, most of the technology issues and trends described above are in use in some form today.

As outlined below, the City must continue to progress in its quest to support a service delivery model that is digital, mobile and innovative. By continuing to follow proven industry trends, and not striving to be first and succumbing to the technology hype cycle, it can succeed. This digital, mobile model relies on a modern IT infrastructure and modern enterprise systems. It also requires appropriate staff resources both within the IT department and out in the business units. In a continuing climate of fiscal constraints, resources must continue to be allocated to continue these complex initiatives in order to continually move the organization forward.

Consumerization of IT/Mobility/Enterprise Mobility

The City has been engaged in a form of enterprise mobility since the early 1990s when the first Fire Department MDTs (Mobile Data Terminals) were installed in fire apparatus to display call information on screen as part of the implementation of the PRC CAD system. While this application has been replaced multiple times over the years, the functionality has not.

The current New World CAD system utilizes a mobile client in both fire and police vehicles to display much more complete call information on computer screens. Netbooks have been issued to law enforcement personnel with the New World mobile report writing client installed for mobile use outside vehicles. The netbooks have had limited use and alternate hardware will be considered at the next refresh point.

While the current version of Tyler Munis ERP does offer a field inspector application designed to provide permit field crews with convenient Windows tablet access over a wireless connection, the rest of the suite is not easily compatible with enterprise mobility for city staff. The next version scheduled for release in mid 2015 promises it will be, as its client is completely HTML5 compatible and will run on non-Microsoft web browsers.

Other enterprise mobility initiatives include Community Preservation staff use of their GoEnforce application via iPads in the field. In a limited way, Council's use of iAnnotate on iPads for agendas and reports is another current use. Staff is currently monitoring deployment developments for law enforcement applications deployed on tablets that allow access to run inquiries in CA-DOJ (California Department of Justice), DMV, FBI, and NCIC (National Crime Information Center) criminal databases.

All future system implementations, including a new agenda management system for both staff, committee members and Council, will be fully enterprise-mobility-capable. In order to properly implement enterprise mobility, especially in the area of law enforcement applications, in addition to maintaining an overall level of security and control in general, an MDM (Mobile Device Management) solution must be implemented. The City currently has this capability through its anti-virus solution vendor Sophos, but it has not been implemented at this time. Among the many

benefits will be the ability to locate and/or remotely wipe misplaced units, as well as centrally push out updates and control applications installed on individual devices.

When considering government apps that are compatible with the concept of the consumerization of IT, the City has entered this area with its Access Hayward app that has been available for iPhone/iOS since 2010 and Android devices since 2011. Use of these apps by our constituents has been strong, with about one-third of the approximately 14,000 yearly Access Hayward requests coming from this mobile app. Another one-third of requests are entered via the web, making fully two-thirds of all requests entered into the system directly by users. (The last third are entered by city staff based on telephone or email requests). In addition to use of popular social media platforms such as Facebook, Twitter and YouTube by our Community and Media Relations Office, the police department has also implemented Nixle and MyPD apps that provide information and alerts to smartphone and tablet users.

The City's 911 system provider, New World Systems, has announced its intention to deliver an integrated Text-to-9-1-1 offering through a partnership with a third party provider. Staff continues to monitor developments in this area. Regarding FirstNet, the State of California is using town hall meetings and surveys to gather information on how a FirstNet network could be realized. In 2016, proposals will be presented to the governor for direction. Staff will continue to monitor these developments and provide input when requested by the state and FirstNet.

Considerable work and success has been achieved with traditional online access to systems that provide residents and businesses 24/7/365 access to pay water bills online, request building inspections, subscribe to an emergency alert system and submit routine police reports.

City staff have been consumed over the past several years implementing large-scale enterprise systems devoted to improving staff efficiency and providing better information and customer service, largely through traditional means. As has been previously described, these implementations have been accomplished with existing staff with no back-fill positions added for the purpose of accomplishing current work. While this arrangement was necessary because of fiscal constraints, it has slowed both the basic system implementation as well as the implementation of online modules to these systems. As a result, the online modules have not been fully implemented yet. They also do not currently provide the capability for sophisticated mobile access. Once implemented, further work can be accomplished by partnering with all our software providers to enhance these online modules to include mobile features. When considering enhancements to existing online modules, or when choosing to implement new systems, the ultimate goal should be the consumerization of public services.

Open Data/Open Government/Transparency

Staff is currently investigating various commercially available solutions for implementing an Open Data capability once our redesigned primary website goes live. Until then, staff will continue to respond to requests for data from other providers, such as the Bay Area News Group's Public Employee Salaries Database, which is made public through their website.

Constituent Engagement

The City has begun addressing online constituent engagement in two ways. The first was through the implementation of its Hayward 2040 website which utilized a third party platform called MindMixer that enabled the public to comment on the draft general plan during its development. The most recent effort has been the activation and active use of popular social media applications such as Facebook and Twitter by Community and Media Relations Officer Holland. Further efforts are planned once the new primary website design is completed and may incorporate these features in the new site or implement them through a third party application similar to the successful Hayward 2040/MindMixer implementation.

Cloud Services/Software-as-a-Service (SAAS)

Many of the aspects of cloud technology have existed for some time, and were previously referred to as “hosted” systems. The city’s Access Hayward system, which was implemented in 2009, is a hosted system and resides in the cloud. The City’s recently implemented GovDelivery electronic communication system is also cloud based SAAS. The redesigned primary website will be hosted in the cloud as well. This model for software systems and their associated stored data will be used for nearly all new systems that are currently being contemplated (agenda management, open data, online community engagement, etc) for implementation going forward. Staff are also engaged in evaluating the best way to implement cloud-based SAAS versions of email and office productivity applications such as Microsoft Word and Excel, most likely coinciding with the next upgrade cycle of our internal email system.

Security/Cyber Security

Security concerns remain a top priority of staff dedicated to network and server support. In addition to regular anti-virus software updates and security vulnerability scans, staff monitors network and anti-virus software logs on a continuous basis to remain informed and address concerns that arise in a timely manner. End user education is an area that staff intends to address by investigating and implementing some form of required online training about security risks and best practices regarding email and other threats.

Business Resiliency/Continuity/Disaster Recovery

The City has moved far beyond the most basic disaster recovery element of offsite storage of critical data. Beginning in 2010, the installation of the first major virtual server infrastructure also implemented the continuous replication of data across the city fiber optic network between the Police Department headquarters building and City Hall. This was expanded in 2012 when the virtual server infrastructure to support the ERP implementation was installed, and replication of that data between the two city data centers began. While the protection of our critical data has advanced, the resiliency of our business operations in the event of a disaster could be improved. Staff is currently investigating how cloud storage of this critical data could improve and enhance our business resiliency.

Virtualization

The City has already fully implemented virtual server technology, and as outlined above major virtual server infrastructure is in use in the City today. For applications where an on-premise server is required, all such application servers will utilize this technology.

Agile Development/Agile Operations/Agile DevOps

City staff currently exhibit many of the characteristics of Agile DevOps. Departmental staff have worked closely with traditional IT staff on major enterprise system implementations, and these successful implementations have relied on this shared culture to deliver these systems. This could be improved upon greatly if the city were able to dedicate staff resources to the implementation of future systems. In the absence of such staff, these complex implementations have relied upon “heroes” from within the departments and within IT for success. Staff with titles such as police lieutenant, fire captain, financial analyst, assistant planner, and secretary have worked extremely long hours to work on these system implementations, often in addition to attempting to perform their regular duties. The addition of project management staff in IT, as well as identified departmental staff resources with the capacity and aptitude to implement projects would enhance the City’s ability to implement technology projects more regularly and rapidly.

Current and Future IT Projects

The following list of current IT projects includes the number of IT staff currently assigned to each project, and the estimated percentage of time that each staff member is able to devote to the project while continuing to support current systems. These projects are being implemented by 17 IT department technical and management staff members currently responsible for the maintenance and ongoing support of the City’s enterprise systems, email system, and office productivity applications run on approximately 1,335 devices by 800 users who place about 500 service requests each month. As a result, progress can be slower than desired because staff cannot be dedicated solely to projects at the present time.

		Estimated completion date	IT Dept staff	Estimated percent assigned	Status
Current Projects					
Finish ERP implementation	Enhance and refine live modules based on staff experience and desired new functionality that requires further implementation	1/31/2016	2	50%	In progress
Improve and expand online access to transacting business with the city	As last phase of Munis implementation, refine and expand public online access to transacting business with the City, such as online permit applications and plan submittals, paying fees and all types of bills online	6/30/2016	1	25%	In progress
Network Infrastructure Update	Replace entire network infrastructure that is 7 years old	11/30/2015	2	75%	Vendor selection
Body worn cameras for PD	Implement and support body worn camera system, including new Digital Evidence Management System (DEMS)	12/31/2015	2	15%	In progress
Primary website redesign	In partnership with City Manager's Office, launch new website in early 2016	12/31/2015	1	20%	In progress
Fire and Police staff scheduling and timekeeping	Upgrade/expand existing Fire Department Telestaff scheduling and timekeeping system to new server and latest version, and include Police Department	6/30/2016	2	10%	In progress
Implement ALPR	Automated license plate readers for police	4/30/2015	1	20%	In progress
Public security camera pilot	Pilot project to investigate public security cameras	6/30/2015	1	20%	In progress
Desktop computer replacement project	Continual upgrade of staff computers		2	25%	In progress
Improve access and use of electronic documents citywide	Expand use of electronic documents in Munis ERP, support departmental implementation of electronic plan checking by staff	1/31/2016	2	10%	In progress
Support pilot testing of Advanced Metering Infrastructure (AMI) systems	Support pilot testing of AMI technology for utilities, meter readings, associated online data available to customers	9/30/2015	1	10%	In progress
Council Chamber technology upgrade	Replace outdated broadcast and audio/video technology in the council chamber	9/15/2015	1	50%	Vendor selection
Agenda Management System	Replace existing Agenda Manager system	8/31/2015	1	10%	Vendor selection
City Hall conference room technology upgrade	Enhance conference room technology incorporating advanced video/audio and virtual meeting capabilities	6/30/2016	1	10%	Investigation
Transparency: Open Data	Investigate and implement Open Data capabilities on our website	12/31/2015	1	10%	Investigation
Citizen Engagement	Investigate and implement digital Citizen Engagement capabilities on our website	12/31/2015	1	10%	Investigation
Mobile Device Management (MDM) System implementation	Investigate and implement an MDM solution for city owned tablets	12/31/2015	1	5%	Investigation
Cloud Solutions	Investigate cloud based solutions such as Office 365, Azure, Amazon Cloud Services for office productivity, file storage, business resiliency/continuity/disaster recovery	6/30/2016	1	5%	Investigation

Future Projects	Description	Challenges
Improve Enterprise Mobility capabilities of major enterprise systems	Enhance useful integration of tablet technology with our major systems, such as Munis, New World, Laserfiche	Progress relies on partnership with vendors and is largely dependent on their development direction and schedule
Improve mobile enabled public access to city services	Continue to refine online access from mobile devices to meet consumer users expectations and desires	Progress relies on partnership with vendors and is largely dependent on their development direction and schedule
Support implementation of Advanced Metering Infrastructure	Support implementation of AMI technology for utilities, meter readings, associated online data	Major equipment investment required
Re-invest, leverage and better integrate current technologies and systems	Investigate and improve the use of newly implemented systems	Continual process that relies on end user knowledge, experience and business knowledge
High Speed Fiber	Partner with Economic Development, Public Works and Development Services to expand availability of high speed fiber	Partnerships and funding for large scale project
Technology for new library (under construction)	Assist with technology infrastructure during design and construction as needed	Complex large scale project

Staffing and Workload Study Results

In 2014, the Human Resources Department contracted with an outside consulting firm to conduct an organizational and classification study of the City's IT Department. The study included the development of recommendations for staffing levels, reporting relationships, and process efficiencies as well as the development of a classification structure that reflects and implements the organizational recommendations. The study consists of two components, organizational and classification.

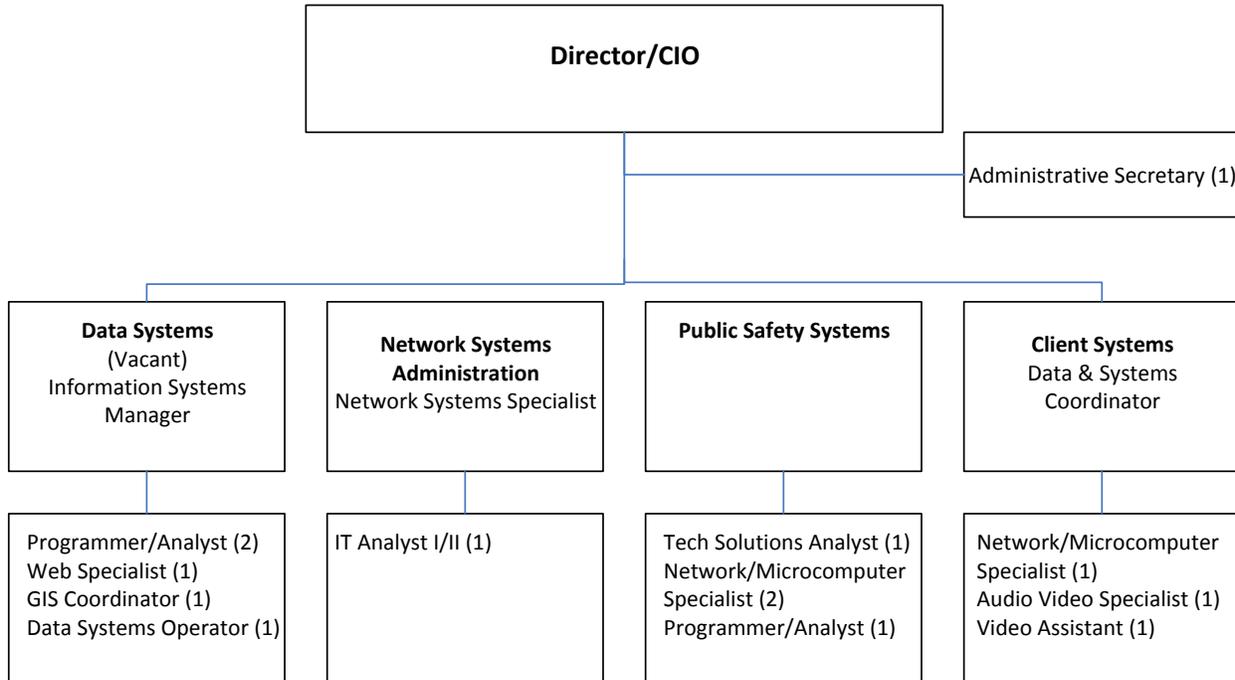
The organizational component of the study collected and analyzed workload data of existing IT Department personnel, and identified key functions, responsibilities, and assignments. The consultant met with the management team to identify operational, customer, and related needs, and identified gaps in support needs and staffing. Data was collected from a variety of peer cities with respect to technology support, organization size, and services provided. Staff workload data was gathered from individual position inventory questionnaires and workload logs. Each IT Department staff member was interviewed by the consultant to obtain clarification of job roles and responsibilities.

The consultant analyzed all of the data collected, compiled statistics, and developed organization and staffing recommendations for level and placement of staffing to meet the City's technology delivery needs. Once the organizational recommendations were completed, the consultant provided draft job classification titles and descriptions for review by IT department management and Human Resources.

Existing Organization

The report noted that for a support organization within a city the size of Hayward, the current IT Department staffing level is low.

The existing IT organizational structure is depicted below:



When eliminating the four full time equivalents (FTE) dedicated to Public Safety, the two dedicated to video production, and the one vacant position, the remaining ten FTE cannot sustain effective technology support for all City departments. This is evidenced by the fact that the IT Department supports an ever-increasing array of hardware including desktop computers, notebook computers, tablets, and mobile data computers (MDC). This staff is also responsible for smart phone support, both City-owned and user's smartphones, and a wide range of peripheral devices including printers, scanners, cameras, audio recorders, desktop phones, external hard drives and projectors. City-wide, the number of supported devices now exceeds 1300 units (Desktops, Laptops, Smart Phones, and MDCs). The vacant Information Systems Manager position creates organizational difficulties. The IT Director has assumed those delivery responsibilities in addition to his leadership role; thereby creating too many direct reports and an unbalanced workload. No additional supervisors or managers have been formally identified within the organization. The centralization of all technical resources within the City is by name only; four resources are assigned exclusively to Public Safety; therefore, the ability to share all technical resources across the organization is limited.

There is no clear identification as to staff roles and responsibilities within the IT Department. There are few career advancement opportunities within the existing IT Department. The IT Department also contracts with an independent Programmer/Analyst for technical support associated with the MUNIS ERP implementation. It is anticipated that this need may develop into a full-time

requirement as all new modules become operational. Also, support of the citywide GIS system and its critical data, which is also used by the public safety CAD/RMS and citywide ERP systems, is dependent on a single position which is not recommended.

Peer Cities Comparison

The consultant worked with the IT Director to identify California peer cities to objectively match technology resources among similar sized cities with organizations supporting similar municipal functions (ie Fire, Police and general staff functions) . A questionnaire was created which gathered details relative to support services provided by each City’s IT organization. The survey was distributed to the cities of Berkeley, Corona, Escondido, Fremont, Ontario, Palo Alto, Pasadena, Richmond, San Mateo, Santa Rosa, Sunnyvale and Torrance. Nine cities completed the survey; Berkeley, Pasadena, and Richmond did not respond. For comparison, the City of Hayward is included in the summary of the responses as shown in the following table:

	Corona	Escondido	Fremont	Hayward	Ontario	Palo Alto	San Mateo	Santa Rosa	Sunnyvale	Torrance
General Fund Budget	\$114M	\$82M	\$149M	\$127M	\$424M	\$161M	\$83M	\$124M	\$143M	\$177M
Capital Budget	\$44M	\$16M	\$25.6M	\$101M	\$49M	\$61M	\$40M	\$15M	\$36M	\$194M
IT Budget	\$1.8M	\$3.6M	\$6.6M	\$4.4M	\$8.7M	\$12.6M	\$3.5M	\$5.3M	\$3.6M	\$4.6M
IT Capital Budget	\$748,000	0	0	\$1.4M	\$200,000	\$9.8M	\$600,000	\$1.6M	\$3.3M	\$4.5M
City FTEs	638	790	833	801	1,053	1020	630	1200	870	1319
IT FTEs	13	26	22	17	25	32.5	15	25	22	45.5
Laptops	201	154	176	273	276	300	50	500	105	195
Desktops	940	933	684	748	839	800	500	1000	725	813
Smart phones/tablets	48	59	500	231	300	100	0	200	60	161
Landline telephones	40	762	920	100	50	315	0	0	1000	1125
VoIP phones	430	500	300	800	700	975	650	1200	0	75
Cell phones	433	236	25	0	100	300	0	500	264	276
Two-way radios	182	0	866	0	1100	0	0	0	464	1200
MDC/MDT	128	143	130	83	200	80	0	200	58	0
Cameras	444	22	0	0	50	0	0	150	25	20
Virtual Servers	86	53	95	120	200	88	100	30	95	68
Physical Servers	5	91	12	30	127	90	10	20	90	61
Customers	1150	995	833	800	1100	1100	700	1200	850	1100
Service Calls/month	505	461	458	445	800	855	150	450	500	1450

General observations relative to the peer city data include:

- Only Torrance has a separate IT group for the Police Department.
- Escondido has 1 Public Safety Manager and 2 Public Safety Analysts with the IT Department.
- Every city has at least 2 managers (supervisors) reporting to the IT Director.
- Help Desk positions range from 2 – 8 FTE
- Average number of customers supported per IT Help Desk FTE is 44; Hayward is 53
- Average number of total supported devices per IT Help Desk FTE is 202,; Hayward is 276

Proposed Organization

Based on staff interviews, analysis of the peer city responses, and the consultant's experience working with public sector technology organizations within the State of California, the current organization structure is not as effective as it could be. The findings include:

- A lack of communications and sharing of information among organizational units.
- Outdated job descriptions for many positions within the IT Department.
- There are not enough managers for day-to-day operations. The IT Director is the single management voice for the department while, at the same time, managing the complex implementation of a new ERP system.
- A lack of communication to City departments relative to technology projects, priorities, status, issues, and activities.

In order to resolve these issues, the report recommends the City reorganize the IT Department to place an emphasis on business functions and customer support. New management/supervisory positions should be created to provide a lead role for specific organizational units with emphasis on technology support, mentoring and “doing” rather than managing. This structure provides opportunities for professional growth, job enrichment, and position cross-training. The plan increases the IT Department by three and reorganizes and redistributes existing positions to allow for improved internal collaboration and communication which will improve the delivery of technology services throughout the City.

From a staffing perspective, the industry standard for desktop support (desktops and laptops only) is one technician for every 150 – 200 computers. The IT Department is currently staffed with four FTE (1 Data & Systems Coordinator, and 3 Network/Microcomputer Specialists) in support of desktops/laptops. The City has approximately 748 desktop computers and 273 laptop computers, which places the support ratio, in total, at 255 per technician (1021/4 FTE). When looking just at Public Safety, the ratio is 225 per technician (563/2.5 FTE). The remaining technical staff, supporting all other City departments, is 305 per technician (458/1.5 FTE).

The proposed organization would consist of the following functional units:

- **Infrastructure:** This group would focus on the operational components of the City's network infrastructure including server administration, network administration, enterprise architecture, database administration, backup and recovery, disaster planning, telephone support, and security. Infrastructure would also be responsible for patch management, capacity planning, production system operations and service continuity.
- **Customer Support:** This group would be responsible for client-facing activities. This centralized team would include the Help Desk (call answer and technician deployment), desktop and laptop support, and audio-visual support.
- **Public Safety Support:** This group would be dedicated to the technology activities performed for the Police and Fire Departments. It should be noted that three FTE are dedicated to Public Safety technology assignments. Two additional FTEs (Helpdesk and Network) will share responsibilities between Public Safety and City-wide assignment based on work load, priorities, and operational needs.
- **Technology Solutions:** Currently this position (Technology Solutions Analyst II) is focused

exclusively on Fire and Police technology projects including the management of project implementations and departmental initiatives. The position offers technical consultation on the application of new products, software, and functionality. This position should provide the same service on a city-wide scale as the consulting service and application of technology is warranted throughout all departments. With the recommended addition of a working manager for Public Safety, the position should provide needed project management to major technology implementations regardless of the department. A portion of the position would address public safety initiatives and/or new technology, but this same service should be provided to all City departments.

Evaluation

The proposed organization creates a defined structure (Infrastructure, Customer Support, Public Safety, and Project Management) for the delivery of technology services. Specifically it:

- Distributes the supervisory functions throughout the organization thereby reducing the day-to-day management role of the IT Director.
- Offers career development positions throughout the organization.
- Adds new resources to key functions.
- Centralizes network support.
- Provides position backups.
- Dedicates technology resources to Public Safety.
- Provides a single source for strategic implementations and projects.
- Distributes the work load throughout the organization.

Plan to Implement Study Results

Based on preliminary results of this study, the City Manager recommended Council authorize the addition of two new positions and the reclassification of two other positions as part of its action to implement changes based on the FY 2015 Mid-Year Budget Review.

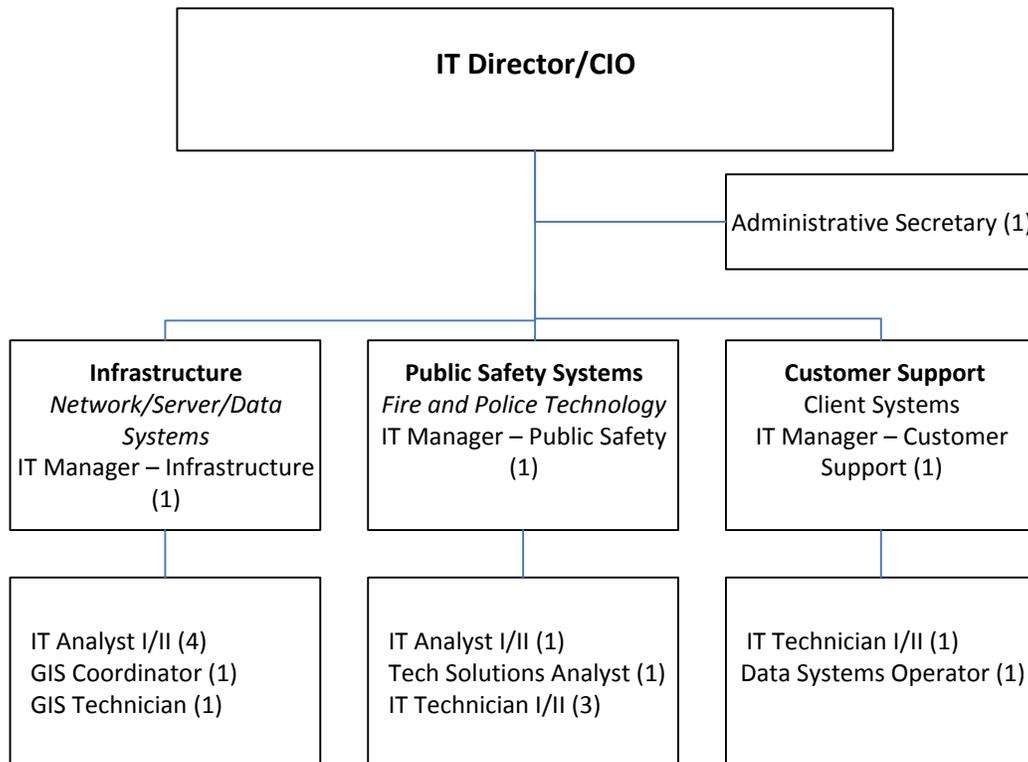
This Council action created recommended management positions to oversee the critical areas of infrastructure support, public safety support and customer support. With the addition of a working manager position for public safety, it is anticipated that the existing Technology Solutions Analyst position will be able to support project implementations for departments outside public safety as well.

One additional IT technical position was authorized as well to address the shortage of IT Help Desk technicians to support public safety as well as city devices and users across the organization.

For the upcoming FY 2016 annual budget, the IT and Finance departments are discussing additional position changes that will fully implement the study recommendations. The contract position dedicated to ERP support has been made a permanent position. To address the need for additional IT technician support of infrastructure, it is proposed that an existing technical position be repurposed. With city website design and development work transitioning to an outside firm, the existing Web Specialist position will move to network and server infrastructure

support activities. To address the need for additional IT support of the citywide GIS system and its critical data, a new GIS Technician position is proposed. In order to expand and enhance the City’s video production capability, responsibility for management of that staff will transfer to the Community and Media Relations Officer in the City Manager’s Office. Finally, it has been proposed that all classification title and description changes recommended by the study be implemented as part of the FY 2016 annual budget.

The proposed IT organizational structure is depicted below:



NEXT STEPS

This report has outlined many of the necessary building blocks of an IT infrastructure and a city organization that will enable residents and businesses to interact with city government in a mobile, digital way based on modern expectations resulting from the consumerization of IT. These current technology trends, the city’s response to those trends, its current and planned project workload, results from its recent IT staffing study, as well as the implementation and further proposals arising from staffing study elements should all be considered. While it is anticipated that with additional staffing resources, city staff can make progress on the sometimes overwhelming number of complex projects planned, more should be considered.

This includes the potential addition of a full time project manager position that can drive projects and obtain necessary staffing resources across departments, creating an Agile DevOps culture, and commit those resources to work toward the goals outlined in this report. This position would be

free of day-to-day operational responsibilities and could concentrate on delivering technology based projects. A more fully formed project management “organization” would free the City from relying on departmental “heroes” to implement projects. In this way, the city would build its capacity to implement technology projects more regularly and rapidly.

“Amateurs argue strategy, professionals argue capacity.”

Alex Petit, CIO, State of Oregon, paraphrased from other sources, and presented along with the following graphic to a recent symposium on agile government.



Prepared and Recommended by: Mark Guenther, Information Technology Director

Approved by:

A handwritten signature in black ink, appearing to read 'Fran David', written over a horizontal line.

Fran David, City Manager



Suggested Technology Application Committee Meeting Topics for 2015

June 17, 2015
Council Chamber Technology Upgrade Project Recommendation
High Speed Hayward Fiber Optic Loop
Update on Fire Connectivity Upgrade – New World CAD System
Update on Primary Website Redesign Project
Status of Technology Services Recruitment
September 16, 2015
Council Chamber Technology Upgrade Project Update
Public Security Camera Pilot Project Update
Update on Network Infrastructure Replacement Project
Update on High Speed Hayward Fiber Optic Loop
Update on Fire connectivity upgrade
Update on Primary Website Redesign Project
November 18, 2015
Hayward Self Service Update - Online Access to City Services
Body Worn Camera Project Update
Update on Network Infrastructure Replacement Project
Update on High Speed Hayward Fiber Optic Loop
Update on Primary Website Redesign Project
Review Agenda Topics for 2016