Date of Council Meeting: February 24, 2014

TOWN OF LEESBURG
TOWN COUNCIL MEETING

Subject: Acceptance of Technology and Communications Commission IT Strategic Plan

Staff Contact: Annie Carlson, IT Manager

Recommendation: Staff recommends that Town Council accept the Strategic Plan developed by the Technology and Communications Commission, presented December 10, 2013.

Issue: Should Town Council accept the Strategic Plan developed by the Technology and Communications Commission, presented December 10, 2013?

Fiscal Impact: The fiscal impact of recommendations made in the IT Strategic Plan will have to be determined individually, as they are pursued.

Background: Starting in April of 2012, the Strategic Plan Subcommittee of the Technology and Communications Commission began a survey to use as the basis of their Information Technology(IT) Strategic Plan. After conducting the survey and reviewing the Town's current IT operations, the Subcommittee then drafted a Strategic Plan to guide the Town Council's long-term strategy for IT. On December 10, 2012, the Commission presented its five-year plan to the Town Council for acceptance/endorsement.

The plan recommended:

1. Improvement of outward facing Town information technology by redesigning the website, including adding an e311/CRM component, and upgrading the online payment portal.
2. Reduction in the dependence on internal resources by moving services to the cloud, contracting out for helpdesk support, and maintaining the relationship with the County's IT and the Town IT's autonomy.
3. Optimization, integration, and documentation of current systems and processes.
4. Increase in government transparency in support of open access to Town information.

Draft motion:
"I move that the Town Council accept/endorse the Technology and Communications Commission IT Strategic Plan presented to Council on December 10, 2013."

Or

"I move . . . (alternate motion)."

Town of Leesburg, Virginia

Department of Information Technology Strategic Plan

Overview

In January of 2013 the Town of Leesburg Technology and Communications Commission approved a subcommittee to work in conjunction with the Town's IT department to create a Strategic IT Plan for the Town.

This Plan presents a comprehensive description of the IT organization and systems that the Town currently has. It also describes the goals and objectives of the Town as they relate to these assets and seeks to understand current strengths and weaknesses.

Finally the Plan makes recommendations that we believe are desirable not for just the internal operations of the Town government, but for all stakeholders interacting and interfacing with our growing Town and evolving technologies.

Strategic Goals

Goal 1 – Outward Facing IT

- **Town Website - New site with mobile device first approach, externally hosted.**
- **e311/Customer Relationship Management (CRM) – Increase publics access to information / reduce dependence on Town staff.**
- **Online Bill Pay – Current systems is insufficient, recommend implementation of a new system in 2014.**

Strategic Goals

Goal 2 – Reduce Dependence On Internally Managed Systems And Town IT Staff

- Move services to the cloud – Look at additional opportunities to move technologies.
- Email – Look at options for external hosting to increase uptime and reduce dependence on staff.
- Staff – Consider contracted IT support for helpdesk/desktop support.
- Loudoun County IT - Continue to leverage the value of what Loudoun County provides to the town while maintaining a level of autonomy.

Strategic Goals

Goal 3 – Optimize Systems In Use, Improve Integration Between Those Systems And Document IT Systems And Processes

- Desktop Virtualization – Move away from dependence on traditional PC model.
- Mobility – Address need to increase access through devices and use of personal devices.
- Backups and disaster Recovery Planning – No comprehensive plan in place.
- IT Documentation – Increase level of documentation.

Strategic Goals

Goal 4 – Increase Transparency

The TCC recommends that IT systems ought to support open access to information as much as possible. Our citizens look to local government to work on their behalf and provide oversight on matters that significantly impact their quality of life. Town Government fulfills this role most effectively when its activities are open and transparent to citizens. With visibility into government actions and spending, stakeholders of all kinds are more likely to participate in the political process and hold government officials accountable for their actions. When our citizens engage in the issues that affect them, they can help to ensure that power and public funds are used wisely and are representative of their interests.

Strategic Goals

Goal 4 – Increase Transparency

The IT infrastructure and capabilities of Town systems can play an important role in fostering the development of effective collaboration and dialogue between the Town Government and its various constituents and users. Technologies employed ought to support openness because transparency strengthens our democracy and promotes efficiency and effectiveness in Government.

Accordingly we believe that considerations of the openness, and ease of access to information maintained by the Town, need to be part of any and all IT plans and acquisitions.

TOWN OF LEESBURG

DEPARMENT OF INFORMATION TECHNOLOGY

STRATEGIC PLAN

DRAFT

DECEMBER 10, 2013

CONTENTS

Executive Summary 2
A Brief HISTORY OF the IT DEPARTMENT 2
WHERE ARE WE NOW? 3
Staffing 3
Current ENTERPRISE SYSTEMS 4
Current IT Infrastructure 7
Where are We Going AND HOW DO WE GET THERE? - STRATEGIC GOALS 8
Goal 1 – Outward facing IT 9
Goal 2 – Reduce dependence on internally managed systems and Town IT staff 10
Goal 3 – Optimize systems currently in use, improve integration between those systems and document IT systems and processes. 12
Goal 4 – Increase Transparency 13
FIVE-YEAR IMPLEMENTATION PLAN 14
Overview 14
Financial Summary 14
Detailed Capital and Operating Expenditures 14
Implementation Timeline (include performance metrics and reporting schedule) 15
APPENDICES 16
APPENDIX A: GLOSSARY OF IT TERMINOLOGY 16
Appendix B: Enterprise Systems 17
APPENDIX C: IT Departmental Survey results 30
Town of Leesburg 30
Information Technology Departmental Survey 30

DRAFT

EXECUTIVE SUMMARY

Background

Current trends in local government IT

Summary of recommendations

A BRIEF HISTORY OF THE IT DEPARTMENT

In 1999, The Town established its Information Technology department in response to growing demands to communicate and share information. Also in 1999, the Information Technology Commission was formed to advise the Council on the Town's Information Technology Infrastructure needs, and the first Town website was launched. In 2000, four full-time IT personnel were hired and a network was implemented including Microsoft Exchange to provide email, contacts and calendaring, file sharing, and support of client-server applications.

In 2002 the IT department implemented a Laserfiche document management system and audio visual systems for the Council Chambers. In 2003 fiber optic cable was deployed for the use of the Town. In 2005 Track-It!, a work order system was implemented and the Town data center was moved from Town Hall to the Police Department. In 2006 MUNIS was deployed, replacing a legacy IBM AS400 system to provide an Enterprise Resource Planning (ERP) approach. In 2008 a CISCO VoIP (Voice over Internet Protocol) phone system was deployed to the Police Department and Utilities Maintenance division as a pilot in an effort reduce costs and improve administration of the system.

In 2008 the Town website was redesigned. A web Content Management System (CMS) was put in place to allow departments to manage their own content. In 2008 a SharePoint portal was introduced provide a collaborative platform for work across the organization. In 2008 IT Manager Wendy Wickens and John Wells expressed a need to have a comprehensive plan for the Information Technology needs of the Town. In 2010 the CISCO VoIP phone system was deployed town wide. Also at this time, the Town experienced loss or stagnation of revenue, forcing the delay or end of IT initiatives such as equipment maintenance and replacement and training and updating of systems.

In 2011 Laserfiche document management system was upgraded from a department centric model to an enterprise version to broaden access to town employees, standardize records retention methods and reduce costs of implementation. In 2011, MUNIS ERP was migrated to their private cloud.

A major theme for the FY 2012 budget was for departments to increase their use of IT in an effort to improve efficiencies and make up for the loss of staff for Fiscal Year 2012. Also part of the FY 2012 adopted budget was an overall 10% staff reduction, although the IT Department experienced a 33% reduction in force, losing two of its six staff members. This resulted in a 40% increase in users per IT staff member from 73.5 to 102.8.[1]

[1] FY 2011 total Town FTEs was 441, IT staff was six. In FY 2012, total Town FTEs was 411, while IT staff was reduced to four.

In FY 2013 a fifth position (Software Administrator) was added to support the growth in use of the website. Plans to virtualize network servers, upgrade the SharePoint sites, and upgrade from a static GIS environment to a dynamic enterprise environment were developed.

WHERE ARE WE NOW?

In January of 2013 the Town of Leesburg Technology and Communications Commission approved a subcommittee to work in conjunction with the Town's IT department to create a Strategic IT Plan for the Town. Tom Watson from the Commission volunteered to chair the subcommittee.

IT Staff	5	
Number of users supported	545	410 FTE 135 board and commission (require limited support)
Number of devices supported	1,395	53 Servers 352 PCs 160 Printers 119 Network devices (routers, switches, access points) 377 CISCO VoIP phones 161 Smart Phones and cell phones 105 assorted analog devices (e.g., fax machines) 68 devices in Council Chambers A/V installation

STAFFING

IT DEPARMENT

The IT Department is comprised of a team of five interdependent positions with varying skill sets. There are three basic functional areas: Administration, Hardware, and Software, but all positions support all three areas. The following descriptions are accompanied by the position title(s) that focus on that area.

Administration. IT Manager

IT Administration includes systems analysis and planning, procurement of equipment and services, contract management, consultation on information technology related initiatives and opportunities, business process improvement by automation, and the support of the Technology and Communications Commission. Through its Help Desk Operation, IT provides all technical support for 350 Town users and over 1,500 devices. This includes troubleshooting on all MS Office applications, specialized applications, equipment, and network systems. Support is provided on-site, by phone, email, and remotely.

Hardware. Network Administrator and IT Project Manager

Network Operations includes implementation and support of over 50 network servers, infrastructure connecting 15 Town-owned facilities, as well as platforms for Voice-over-IP (VoIP), Geographic Information Systems (GIS), and video feeds. The 1,000+ end-user devices include PCs, tablets, VoIP, cell and smartphones, peripherals such as printers and plotters, cameras, and A/V broadcasting equipment.

DRAFT

Software. Software Administrator and GIS Coordinator

The IT department provides support for Microsoft Office applications, the Town's websites and payment portals, SharePoint intranet platforms for internal and external collaboration, Laserfiche document management, Munis ERP, and Geographic Information Systems. Other critical functions include website development, database administration, and software development.

IT SPECIALISTS IN LPD AND P&R

In addition to IT Department staff, the Police and Parks and Recreation Departments each have a staff member dedicated to Information Systems management. These dedicated personnel handle most of the front line technical support needs of their respective departments, as well as manage the department-specific systems described below. The IT Department still provides support to the Police and Parks and Recreation Departments for enterprise systems, procurement, and higher level technical support as needed.

CURRENT ENTERPRISE SYSTEMS

The Town of Leesburg's portfolio of enterprise systems is growing. Currently, there are about a dozen major systems used town-wide and another eight major specialized systems used by individual departments. See table below.

DRAFT

TABLE 1. MAJOR INFORMATION TECHNOLOGY SYSTEMS

System	*Purpose*	*Description*	*External Access?*	*Since*
Data Center	Location of most servers	Centralized processing and storage for enterprise and specialized applications and data.		1999
Cisco Network	Infrastructure including switches, routers and cabling	Conduit for interaction between workstations and servers		1999
MS Office 2010	Business applications	Email (Outlook), Word, Excel, Access, Project, Visio, etc.		1999
Laserfiche	Document storage	Archive for documentation of completed projects	☑	2002
Onyx AV Custom Council Chambers A/V	A/V equipment for meetings held in Council Chambers	Equipment to amplify sound in chambers, large screen projection from PC, record and broadcast meetings for webcast and cable channels	☑	2002
BMC Track-It!	Asset management and work orders	Tracks help desk tickets and holds inventory of IT assets		2005
BlackBerry Enterprise Server	BlackBerry phone fleet management	Provides secure and monitored connection to Town email via cell phone.		
Tyler Munis 9.4	Financials	Accounting, Tax, Utility Billing, HR, AR, AP, Work Orders, Inventory, portals for tax payment and employment application	☑	2006
MS SharePoint 2007	Content management	Intranet, collaboration and workflow		2007
Vision Internet CMS, v. 4	Website	Internet presence, general information, business information, webcasts, links, payment portals, listservs	☑	2008
Cisco Unity Call Manager	VoIP phone system	Computerized phone system	☑	2009
Arc GIS 10.1	Geospatial Information Systems (GIS) Platform	Maps, analysis, reference, location of Town infrastructure and facilities	☑	2013

Major Specialized Systems by Department - Managed by individual departments rather than IT				
Police	New World Mobile, Aegis	Police station management	Dispatch, in-field reporting, records management	
	Mobile Data Terminals (MDTs)	Ruggedized laptops with secure modems in each police car	In-field research and reporting equipment	
Parks and Recreation	Vermont Systems RecTrac	Recreation facility management	Registration, pass management, facility reservations, merchandise/point of sale operations and locker rentals	☑
	Special events websites	Flower & Garden and Airshow websites	Information for public, vendors, and sponsors	☑
Utilities	Aclara	Automated meter reading	Sends usage data to Munis Utility Billing	
	SCADA	Water and wastewater plant management	Monitoring and control of plant operations	
	WinCan	Sanitary CCTV	Inspection of sanitary sewer mains and storm sewer pipes	
Public Works	CL MATS	Traffic Management	Monitoring traffic volume and adjusting traffic signal timing	

DRAFT

CURRENT IT INFRASTRUCTURE

The following chart is a simplified schema showing the major segments of the Town of Leesburg's network. Except for the Town's financial system, Munis, and a few smaller applications, all of the Town's systems are behind the Loudoun County firewall. The County currently provides the Town with broadband internet service at no cost.

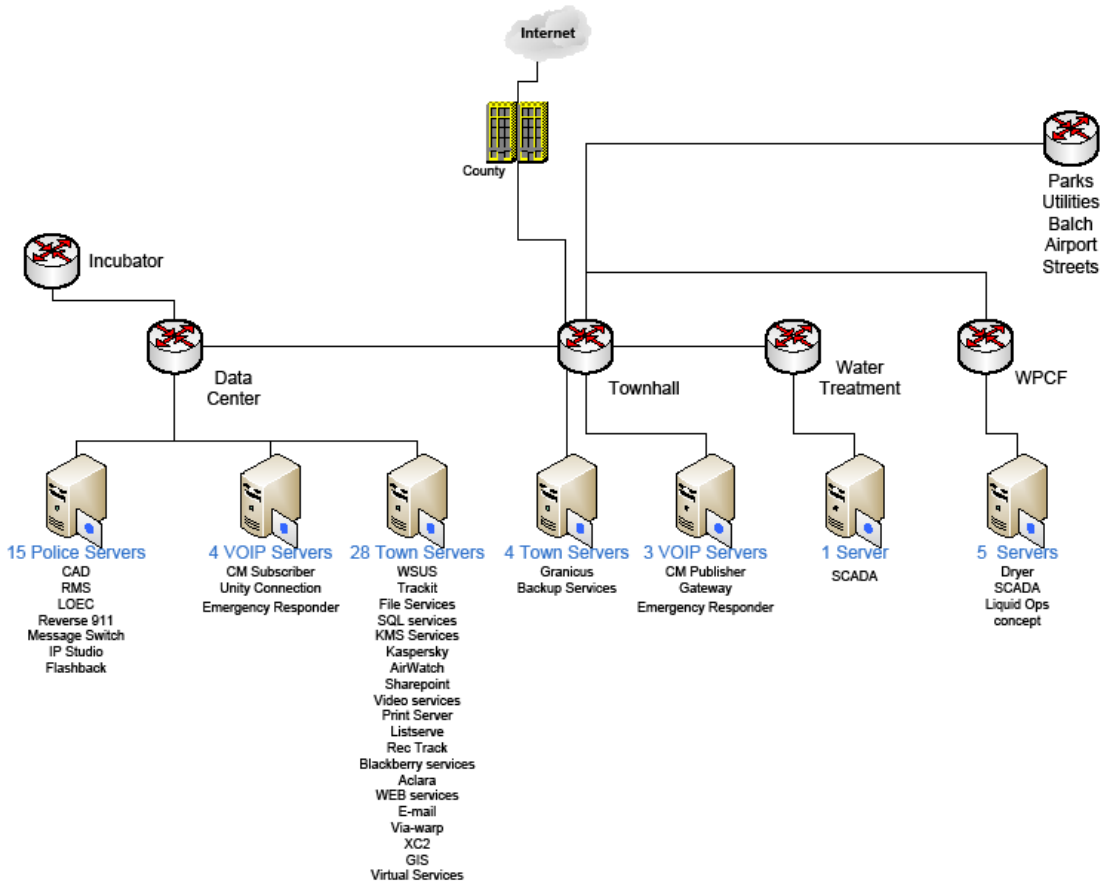


Figure 1. LEESBURG NETWORK INFRASTRUCTURE

WHERE ARE WE GOING AND HOW DO WE GET THERE? - STRATEGIC GOALS

The Leesburg Technology and Communications Commission envisions an IT infrastructure that supports not just internal operations of the Town Government, but also external operations involving all stakeholders who interact with the Town. While many internal systems need modernizing, the Town requires outward facing technology to increase transparency / open up access to public information that town IT systems stores. Some work towards this end has already been done, beginning with the Town's first professional website in 2008, but the revenue loss from the recession stopped most forward movement in IT initiatives and maintenance. In FY 2012, IT Department staff (including one Parks and Recreation IT Specialist and one Police IT Specialist) went from eight employees supporting an average of 54.1 staff users each to six employees supporting 101.8 staff users each, caused by a greater overall reduction in IT staff than was experienced Town-wide. At the same time, departments were encouraged to increase their use of IT in an effort to improve efficiencies and make up for the loss of staff for Fiscal Year 2012.

The Town of Leesburg has had an IT department since 1999 and has adopted many new technologies adding functionality and automation to both Town employees and citizens. While the changes have been substantial in many ways and the contributions tangible they have not always followed a planned approach to IT acquisition and management. A strategic IT plan that is followed and updated continually will afford the town the ability to be proactive in upgrading and maintaining systems and to budget accordingly.

In order to identify IT issues and the needs of the Town's IT department, a survey (Appendix C) was performed, beginning in April 2013. The survey was conducted using in-person interviews and questionnaires distributed by email. Feedback was gathered from more than 30 department heads and others key personnel across all of the Town's departments. Central themes were pulled from the feedback gained from the evaluations and are included in subsequent sections of the Strategic IT Plan.

The information gathered, along with discussions with Town IT department staff and observations by members of the Technology and Communications Commission were used to identify **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats (SWOT) that lead to primary objectives and goals to be considered in the plan.

Finding from the **SWOT** are provided below:

Strengths

- Virtualized server environment
- Recently expanded storage
- Executive management flexibility
- Agility due to small size of government
- Tech savvy Council/Technology and Communications Commission
- Financial stability
- Quality/productivity of staff
- Access to some Loudoun County IT resources

Weaknesses

- Limited staff resources
- Underdeveloped online information and service delivery system
- Underdeveloped remote monitoring and management of internal systems
- No disaster recovery or business continuity planning
- No IT governance structure (e.g., NIST or ITIL)
- Multiple single points of failure
- Dependence on some Loudoun County IT resources
- Inconsistent management leadership on automation of Town services
- Limited transparency

DRAFT

Opportunities

- Tech savvy public
- New technologies to address existing issues
- Upturn in revenue sources
- Open source software
- New options for outsourcing
- New cloud services available

Threats

- Security breaches (viruses, hacking, social engineering, cross-site scripting)
- Unfunded mandates in the form of rapidly growing public and internal demands on IT department resources

GOAL 1 – OUTWARD FACING IT

The Town of Leesburg maintains systems that enable citizens and businesses of the Town to access information, make payments, and request service. To date, no unified approach to interacting with the public over the internet has been developed. Most departments do not have adequate systems, making it difficult to serve Town citizens now and in the future. The Town of Leesburg sits in an affluent county with many technology companies and residents who are considered tech savvy. It is important to provide the Town's constituents with robust systems to access town resources and that these systems be kept up to date. From a strategic perspective, maintenance, upgrades, and additions to these systems may result in more businesses and private individuals choosing the Town of Leesburg as a place to locate. As the town receives awards for fiscal responsibility and its facilities, it should also strive to be exemplary in its use of technology and communications to attract and retain those wishing to visit, relocate, or do business within the town.

A "mobile device-first" approach should be adopted for all Town IT systems with which any constituent interacts via the internet. In the coming years, more people will be accessing internet resources via mobile devices than through computers. A mobile first approach will help to ensure that the Town's outward facing IT services remain relevant and will help to achieve the goal of increased use of the systems, decreased dependence on phone, email and in person visits to town departments which utilize resources. It will also enable the Town to adopt some of the crowd-sourcing initiatives undertaken successfully by other jurisdictions, such as reporting problems in the field or developing innovative ways to use the Town's information systems.

In the next two years it is recommend the Town of Leesburg address the following items related to how the residents and businesses interact with the Town using Information Technology:

- **Town Website** – The Town's current website was designed and deployed in 2008. Its outdated technology limits the type of changes that can be made, especially in adapting to mobile device access. It is recommended that the website be upgraded using the current vendor Vision Internet and that the new site be in place by the summer of 2014. At present, the website is hosted on the Town's network, which can run very slowly due to security features deployed by Loudoun County IT. It is therefore recommended that the site be hosted externally by Vision as they are in the best position to support it and keep it up-to-date while reducing a dependency on Loudoun County IT systems. Being outside of the County's firewall will also improve its performance.

- **e311/Customer Relationship Management (CRM)** –An e311 system increases the public's access to information and ability to contribute their own information to the Town thereby reducing dependence on town staff to answer the same questions repeatedly or gather information from its constituents. A CRM provides capture, tracking and reporting of requests for service (from any channel – telephone, in-person, email, or online). These two types of systems are often bundled

together in a single product. The Town has not yet developed a unified e311/CRM for bi-directional public interaction, although a few departments have implemented internal work order systems for both internal and external service requests. Introduction of a town-wide e311/CRM system is crucial to providing (1) adequate customer service to the public and (2) the ability for staff to analyze and report on productivity and outcomes. It is recommended the Public Stuff e311/CRM system be purchased with a new website and be implemented by summer of 2014 as an intermediary step before implementing a more robust work order management system by 2018 (see "Asset Management Program" CIP Project in *FY 2014 Budget*, p. 246). A robust work order management system will involve significant changes to the Town's management and measurement of its fixed assets, labor, business processes, payroll, and budget, and thus will require substantial organizational preparation.

- **Online Bill Pay** – The town currently offers some online bill/fee/fine payment through MUNIS, however this system is not user friendly and does not work well from mobile devices. As the use of mobile devices grows, payment by mobile device becomes crucial to successful revenue collection. Therefore, it is recommended that the town upgrade to a system that provides user-friendly online bill payment for users of both computers and mobile devices. Mail and in-person payment options should remain in place. Note: Replacing the current online bill payment system would be a substantial undertaking for the Finance Department, for all divisions (accounting, procurement and operations). The finance department should embrace the use of online bill payment using an outside service that includes a robust system for notification and tracking of payments made, bills past due. Options should be looked at with implementation in 2014. Within 1 year the goal would be to have 50% of the towns business and residents paying BPOL (business and professional occupational licenses). There is little enforcement of these licensing fees with the result being that the town does not know if it is being collected. Enforcement, reduction in those needed to process paper payments will offset the cost of funding this type of service. At present BPOL is currently collected on the honor system.

GOAL 2 – REDUCE DEPENDENCE ON INTERNALLY MANAGED SYSTEMS AND TOWN IT STAFF

- Over the past three to five years there are have been dramatic changes in the IT industry in terms of where applications are hosted and how they are maintained. This has given governments new options that can improve uptime and performance of critical applications, reduce costs, and increase staff productivity. These options have also spurred growth in the user (external and internal) community's expectations. While The Town has successfully moved Munis to the cloud, there are still many systems on town servers that must be maintained, replaced at some point and backed up. Moving systems to cloud services can reduce the dependence on technical staff and add functionality, improving the user experience.

- Website - Recommend moving the Town's website to the cloud (see above).

- Email - Recommend looking at options for cloud hosting and management of the town's email system. There are many examples of municipalities making this move including on a local level the Loudoun County School System. The Town currently maintains an in-house Exchange server. Maintaining this service in-house allows the Town to provide a high level of service and internal email service for Town staff even when the internet is down. However, this is a single server and therefore is a single point of failure and there have been incidences where there have been noticeable outages and difficulties using the town's email. If email were moved to a

hosted solution day-to-day operations of email account management can be performed by lower skilled technicians or administrative staff rather than those in the Town's IT Department. Options include moving the email server to a co-location data center or using a 3rd party cloud based Hosted Exchange service such as Microsoft Office 365. Moving email to a Hosted Exchange will reduce the need for server maintenance freeing up valuable staff time, remove dependence on the County's anti-spam solution which has proven to be at times insufficient in terms of blocking blatant and potentially system damaging spam and in some areas overly restrictive. The biggest improvement will be that the Network Administrator II will be able to focus on more proactive activities such as performance monitoring, strategic planning, and disaster planning. Also, cloud email services utilize clustered server environments eliminating the risk that the failure of a single mail server will result in major problem. Use of a Hosted Exchange service will allow ease of administration with non-technical personnel having the ability to create and manage email accounts. Disadvantages of moving email outside include losing our ability to use email when internet services goes down and possibly longer waits for problem resolution although there would likely be a lower incidence of issues.

- Staff - There is currently a high level of dependence on IT staff to maintain the Town's IT. Additionally senior level engineers are performing helpdesk and desktop support tasks resulting in delays in achieving major technical upgrades and maintenance of critical systems. This represents single points of failure in the event that key staff is not available. Recommend augmenting support through a third-party IT service provider to handle Level 1 (junior technician gathers information and resolves or refers to next level) and Level 2 service (more experienced technician resolves or refers) requests along with emergency after-hours support at higher levels on an as needed basis.

- Loudoun County IT – The Town currently receives significant IT services and support from Loudoun County. This includes a 1 Gigabyte connection that provides the Town government access to the Internet. All Town facilities use this connection through fiber optic connections to the Town Government Center where the County core switch is maintained. The connection to the County is a 1 gigabyte connection The next link, to the County firewall is 1 gigabyte, and the Internet circuit speed is 400Mbps max. These are enterprise level data lines that would otherwise cost the town a large recurring monthly charge as well as the cost of routing and firewall equipment and need to manage these services. As a part of this the Town receives intrusion detection, e-mail filtering, content control, and malware protection from the County. In addition the town also receives assistance with GIS and LMIS from Loudoun County.

  In order to control IT costs it is important that the town continue to work with Loudoun County to maintain use of data lines and other IT support services that are offered. There are additional options to consider including the county offering additional IT support services as there could be cost savings and access to additional IT resources. While this is worth considering it is important to consider that the Town maintain its own core IT resources and where possible seek to manage these systems using the town's internal or contracted IT resources. This is primarily because one of the Town's strengths is its smaller size, which allows it to respond to change more quickly.

DRAFT

GOAL 3 – OPTIMIZE SYSTEMS CURRENTLY IN USE, IMPROVE INTEGRATION BETWEEN THOSE SYSTEMS AND DOCUMENT IT SYSTEMS AND PROCESSES.

The town maintains a variety of systems that require routine maintenance and upgrades. As the demands of IT increase so does the need to improve how these systems interact amongst themselves and with other systems. Over the next 1-5 years it is recommended the following items be addressed.

- Desktop Virtualization (ongoing) - To reduce future hardware costs and management requirements. Over the next 1 to 3 years migrate eligible standalone desktops to virtualized workstations to reduce hardware budget and support. At present four desktop computers have been virtualized representing less than 1% of all of the town's desktops. The goal over is to grow this number to over 15% in the next 18-24 months.

- Mobility (ongoing) – Implement a Mobile Device policy to document the use of town-owned devices, BYOD policy and goals, use of Mobile Device Management software, as well as a move away from BlackBerry devices and the BlackBerry Enterprise Software System before support for these devices and software starts to go away. Expand use of town owned Android and IOS devices and consider allowing limited use of personal devices (BYOD) to access some town internal IT systems such as email through use of Mobile Device Management Software to provide security and administration. Introduce use of tablets for field personnel such as Public Works for updating work orders and asset management.

- SharePoint – (ongoing) – Upgrade from 2007 to 2013 to automate internal business processes. Explore public use.

- Laserfiche through rest of departments (ongoing) – Introduce into all departments as official repository for static (approved) documents.

- Backups and disaster recovery planning – Develop documentation of what is backed up and how it is performed. Detail how data will be recovered in the event of corruption or loss of data or hardware. Backup of systems –Business continuity – Disaster recovery of current system is not sufficient to guarantee continuity of use of these systems and is overly dependent on specific technical resources. Documentation should be structured to allow any skilled IT support team to recover the town's IT systems.

- IT Documentation – accounts, passwords, settings. It is recommended this be addressed immediately with a systemized approach to documenting all systems going forward in a way that is of use to both technical and non-technical staff.

- Ticketing system – The town currently has an IT ticketing system (Track-It!) that is used to track IT service requests. While this system is used, many requests bypass this system making accountability and the ability to collect metrics difficult. Recommend that all IT service requests go through this system with a defined process for use by computer users and the staff that services these requests.

DRAFT

- Remote Monitoring and Management (RMM) Automation – Recommend implementation of more features of the existing comprehensive system to monitor for outages, perform automated remediation for issues, and update/patch systems without direct technical personnel interaction. At present there are a variety of systems in use but no system-wide, comprehensive, auditable tool is in place.

GOAL 4 – INCREASE TRANSPARENCY

The TCC recommends that IT systems ought to support open access to information as much as possible. Our citizens look to local government to work on their behalf and provide oversight on matters that significantly impact their quality of life. Town Government fulfills this role most effectively when its activities are open and transparent to citizens. With visibility into government actions and spending, stakeholders of all kinds are more likely to participate in the political process and hold government officials accountable for their actions. When our citizens engage in the issues that affect them, they can help to ensure that power and public funds are used wisely and are representative of their interests.

The IT infrastructure and capabilities of Town systems can play an important role in fostering the development of effective collaboration and dialogue between the Town Government and its various constituents and users. Technologies employed ought to support openness because transparency strengthens our democracy and promotes efficiency and effectiveness in Government.

Accordingly we believe that considerations of the openness, and ease of access to information maintained by the Town, need to be part of any and all IT plans and acquisitions.

DRAFT

FIVE-YEAR IMPLEMENTATION PLAN

OVERVIEW

FINANCIAL SUMMARY

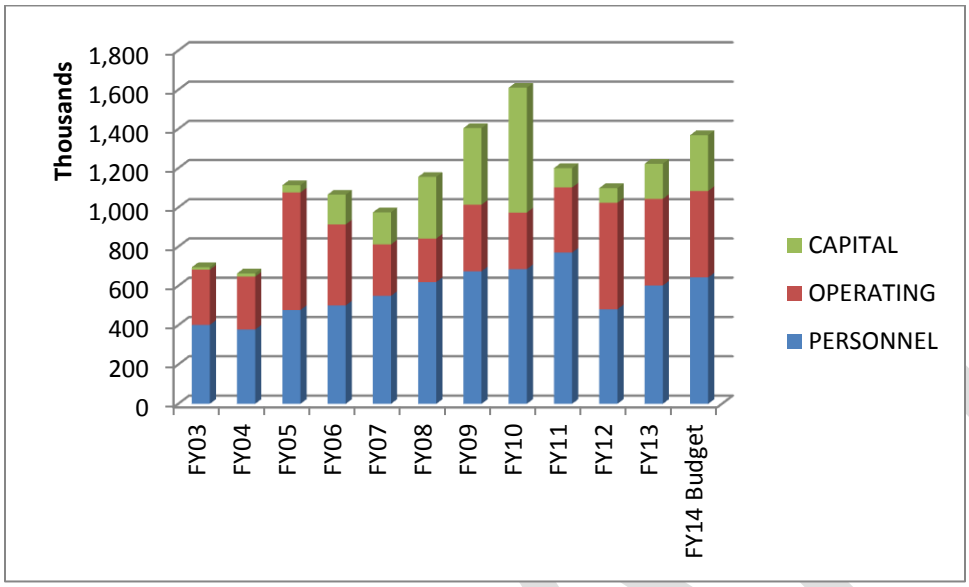


FIGURE 2. IT EXPENDITURES FY 2003-2014

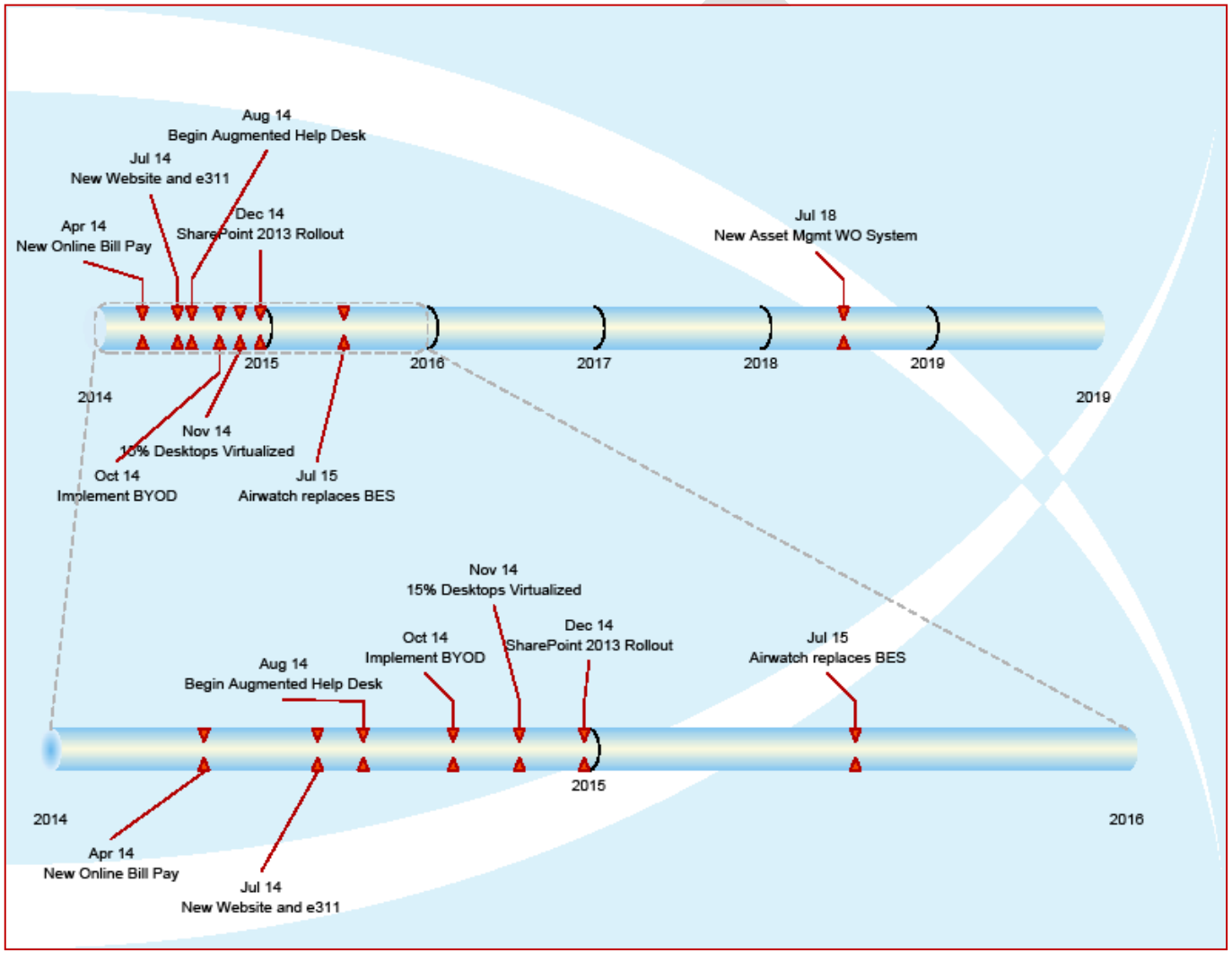
DETAILED CAPITAL AND OPERATING EXPENDITURES

DRAFT

IMPLEMENTATION TIMELINE (INCLUDE PERFORMANCE METRICS AND REPORTING SCHEDULE)

UNDER CONSTRUCTION

FIGURE 3. IMPLEMENTATION TIMELINE



APPENDICES

APPENDIX A: GLOSSARY OF IT TERMINOLOGY

Business Continuity- Steps made by an organization to ensure that critical business functions continue in the event of a failure of a primary system.

CRM: Customer Relationship Management

Disaster Recovery (DR) – The processes, policies and procedures that allow for the recovery of a technology infrastructure in the event of a total loss of a single or multiple systems.

e311: Web portal for requesting any information or services

Fault Tolerance – A design that allows a system to continue operating rather than total failure. Often viewed as the antithesis of a system that is a *single point of failure*.

GIS – Geographic Information System – Software designed to allow design and management of solutions through the application of geographic knowledge.

Hexagram – Automated meter reading system for water usage.

Laserfiche – Document and records management system.

MDT – Mobile Data Terminal

Microsoft Exchange – Mail server, calendaring and contact management developed by Microsoft and runs on Windows Server. Traditionally accessed through Microsoft Outlook or Outlook Web Access.

SharePoint – Web based application from Microsoft providing, intranet, content management, document management and online collaboration tools.

Thin Client – A computer or program that depends heavily on another system, often a server to process its computing needs. In contrast to a Fat Client that represented by the traditional full Windows installation of a standalone PC. Desktop virtualization allows older computer hardware to be utilized to support thin client software thereby extending the life of the hardware and reducing costs.

Virtualization – Using a physical server to support multiple virtual servers to maximize server resources and provide increased fault tolerance. Can be used to support server operating systems as well as desktop operating systems that can be access through a thin client solution.

DRAFT

APPENDIX B: ENTERPRISE SYSTEMS

MAJOR ENTERPRISE SYSTEMS

LMIS

Loudoun County developed the Land Management Information System (LMIS) in the late 1990's. LMIS combines multiple County datasets into one single database. The system consists of modules such as Permits, Parcels, Land Development Applications, and Proffers. The Town of Leesburg started to use LMIS to track their Land Development Applications and Permits in 2006. The Loudoun County IT Department maintains this database.

CISCO NETWORKS

MS EXCHANGE 2007/OFFICE 2010

LASERFICHE

Laserfiche is an enterprise software application that stores documents for easy retrieval. It is a document archive that is based on the series schedules for documents that the library of Virginia produces for document retention. It allows for easy search and retrieval, of electronic documents.

In the early 2000's the State mandated that documents need to be stored electronically. The Town then produced a Request for Proposal (RFP) for electronic document storage and chose Laserfiche and Reams Computer Corporation now known as Unity Business Systems to do the implementation. The Clerk's Office has had the full complement of Town Council and Town related document s scanned and archived dating back to the 1950's. The Human Resources files have been scanned in and add to their repository. The Land Development Repository replaced multiple copies of paper documents and reduced them into one set of documents in one repository across four departments. The Town Attorney's office and Executive department have also been scanning in there documents with easy access.

The Town then purchase Laserfiche' s RIO product which is their Enterprise solution to Document management and retention.

The future of Laserfiche is to expand even further into the organization. Big repositories will include Capital Projects, Parks and Utilities. An upgrade to the virtualized server and connection to a new SQL database and web access upgrade is in the plans for Laserfiche RIO.

COUNCIL CHAMBERS A/V

The Council Chambers equipment is used for the broadcasting of Town Council and Commission meetings. Through the franchise agreements with Comcast and Verizon they are aired on public access channels on each provider's networks. The broadcast is also streamed live over the internet through the Town of Leesburg Website and in partner with Granicus. Granicus host and archives the Town meetings on their servers.

The Council Chamber Equipment was put in place with the Adelphia franchise agreement that was approved in the early 2000's. It allowed the Town to have video and audio broadcast through the Town equipment. It allowed for a computer that controlled the systems on the dais for presentations and recording purposes and video and audio control in another room.

A majority of Council Chamber equipment was upgraded and a secure control room for broadcasting was created outside the council chambers. Major re-wiring, updating of cameras and main system computer equipment were replaced. Since then other items have been replaced as they have come to end of life.

The next step with the Council Chamber equipment would be to upgrade the video conferencing capacities as a new Virginia law allows council and commission member to participate in meetings from remote locations. The ability to interface a video conference with the council chamber equipment would allow for this to happen seamlessly.

As other equipment reaches end of life, the equipment can be replaced. In the current fiscal year there will be a replacement of the recording equipment and presentation computer. Other equipment that could be replaced is the control room computer for the town channel as it is end of life and cannot support the new functionality of the new MS Office applications.

TRACK-IT!

Track-it is a multi-facet solution for the Town of Leesburg's Information Technology Department. It allows for the creating and tracking of help tickets related to computer problems. Other modules allow for inventory of hardware and software, library of information, a solutions center and reporting.

The Information technology Department was in need of a help desk system. The department settle on Track-it as it system to track tickets. The company that has owned Track-it has been sold over the years and major and minor improvements have been made to the application. There has been a lot of information put into Track-it but the system is not fully utilized in the department.

The future of Track-it relies in the how the application is going to be used. If training is needed to get the most out of the program then that needs to be a high priority for the department to undertake.

MOBILE DEVICE MANAGEMENT

The town is currently using multiple platforms for their mobile use. The cell phone usage the town uses is a mix between regular cell phones and smart phones on different operating systems. The town currently uses the droid and, Blackberry's operating systems for smart phones. The Town has deployed two mobile device management systems, the Blackberry Enterprise Server (BES) and the AIRWATCH Mobile Device Management software. As the Town starts to explore the use of tablets, the AirWatch system will play more of a role in the management of these devices.

The Police and the Public Works, Utilities, and Parks crews did away with the Town legacy radio system and went over to the cell and its push to talk capabilities as a way of communicating. As the Blackberry's

became more popular, management started to deploy these devices and Information Technology purchased the blackberry enterprise server to manage all of the Blackberry's. The town recently switched carriers for their cell phones, and smartphones because of low quality of coverage in the town. The result of this change was a big improvement in call quality and coverage.

The Town has tested tablets for two years and has ramped up the use of the tablets by some departments and this has made the need for the AirWatch Mobile Device Management tool essential. More configuration and testing is still needed in the deployment of tablets

The future use of the mobility needs to be assessed as which direction the town should go in, and what policies will dictate "bring your own device" (BYOD.) The tablet industry has exploded and the Town has done a patch work job of trying to deploy and manage these devices.

DRAFT

MUNIS

Munis Enterprise Resource Planning was implemented in the Town to replace legacy financial systems and treasury management. The Town also uses Munis modules for HR, work orders, and web self service portals for employees and taxpayers.

SHAREPOINT

SharePoint 2007 is used to provide one intranet site, one public site and two administrative sites.

Tolnet – Town of Leesburg intranet site

Commissions.leesburgva.gov – Town of Leesburg public site for commission members

SharePoint Administrative site for Tolnet (on Lando)

SharePoint Administrative site for commissions (on Endor)

SharePoint sites are used primarily for document sharing, group calendars, workspaces and simple workflows. The Council Action Calendar is an example of a collaborative site utilizing an Access database and workflows to generate the Council Calendar for Exec. The Police Department uses email to create new posts in SharePoint for Shift reports. The Commissions site serves as a portal for Town business by employees in collaboration with non-employees.

SharePoint 2007 was deployed for the Town of Leesburg intranet in 2007. The public site (commissions.leesburgva.gov) was deployed in 2009.

Our current SharePoint implementation needs updating in order to leverage current Office 2010 capabilities, allow better business data connectivity services with ArcGIS, MUNIS and LaserFiche, incorporate office workflow procedures and processes and provide office 'presence' and conferencing abilities.

WEBSITE

VOIP

The Town uses voice over internet protocol technology (VoIP) for it phone system for all departments in the Town. Since the Town has a robust fiber infrastructure between facilities, this allowed for the conversion from plain old telephone service (POTS) and integrated Services Digital Network (ISDN) to VoIP.

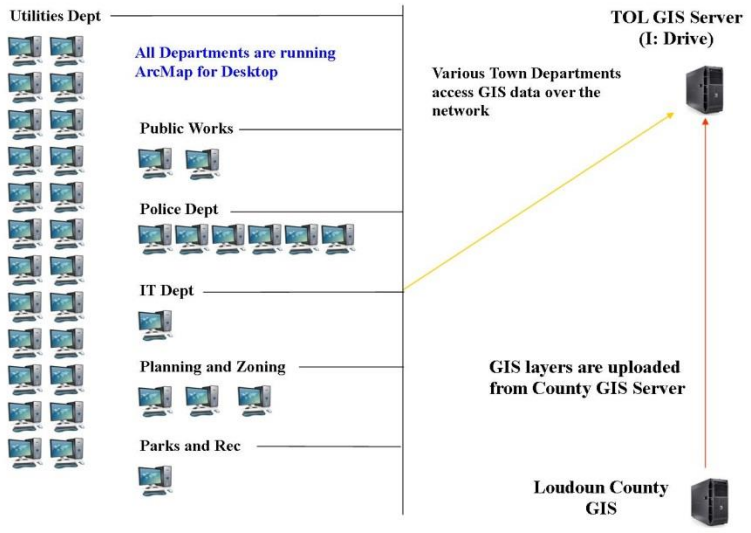
In the mid 2000's the Leesburg Police Department and Utilities Maintenance Division move over to VoIP to better enhance the services and to reduce the cost of maintaining an emergency communications center. By the late 2000's the Department of Information Technology built out the rest of the VoIP network. The town integrated its phones and fax machines into the digital network. The town still maintains copper to some locations not on the town fiber backbone.

This fiscal year the town is looking at the options for upgrading the VoIP system. The Call Manager and Unity Connection will be virtualized but other features such as presences, jabber and video conferencing are being explored as part of the upgrade.

ARC GIS 10.1

Our current GIS system consist of two ArcInfo concurrent licenses, nine ArcView concurrent licenses, one ArcEditor, Spatial Analyst, 3D Analyst, Publisher, and Network Analyst license. Also included but not being utilized are the ArcGIS Server Standard Workgroup and ArcGIS Server Standard for Windows licenses. There is one dedicated SQL server for the Town's GIS data. Currently, we have ArcGIS installed on 37 computers throughout the organization with five departments actively using GIS (Utilities, Police, Planning, Pubic Works, and IT).

Current Town GIS Configuration



Our current GIS allow various Departments the ability to manage and store important geographic information. It also provides employees the ability to perform complex data analysis, data collection, and data/map updates.

GIS was first introduced to the Town in the late 1990's. A GIS needs assessment was conducted in the early 2000's. With the continued steady growth and expansion of Leesburg it was determined that the

Town needed more sophisticated tools to manage its resources. GIS was implemented throughout the town in 2003.

The Town has recently purchased an ELA (Enterprise License Agreement) from ESRI and will begin implementing this enterprise GIS in the fall of 2013. This new system will be an upgrade to our current one. No longer will we be limited to a single platform (desktop). This new enterprise GIS will allow us to work from multiple platforms which includes desktops, laptops, tablets, cloud, and smartphones. It will give employees the ability to do real-time analysis and to interactively work on GIS related projects. Our current system does not have this capability. With the ELA comes ArcGIS Online and Maps for Office. ArcGIS Online is a cloud-based platform which enables GIS users the ability to create, share, and access maps, applications, and data. Map for Office is an MS Office ad-on that allows users the ability to create maps straight from their MS Excel spreadsheets. Also available with the ELA is 1,900 credits for online training.

MAJOR SPECIALIZED SYSTEMS

LPD

Below is a selection of our most used items within Leesburg Police. All items listed below are supported by the Police IT Specialist for the department on a 24/7 basis.

NEW WORLD SYSTEMS

New World Systems is our station management software that manages all aspects of the department reporting and response for the public. New world Systems was purchased as a replacement of our prior management software Vision. New World System requires constant management and monitoring due to its size and usage. New updates to the system are often available but are integrated at our discretion. The system is the most important software within our department. The system's mapping system does need to be updated as well as the software for AEGIS and Mobile.

New World Systems is broken into two parts: Mobile and Aegis.

MOBILE

is our in-field reporting tool. This allows officers in the field to receive calls for service, run checks on cars/people, write reports on call outcome, and communicate with other members for purposes of alerts/questions. Within Mobile is the Report Management System which allows Sergeants and the Records Department to manage reports through the reporting lifecycle. Mobile is an integral part of our organization and allows our officers to stay in touch with Dispatch/Other Officers and stay safe out in the field.

AEGIS

is the records side of the software. Within Aegis are several programs but the most crucial to our organization are LRMS and CAD. CAD is our Computer Aided Dispatch program that allows our dispatchers to take calls from the public and assign new calls to officers in the field. CAD speaks directly to Mobile for this to happen. CAD allows dispatchers to enter in alerts on people/property to keep officers safe and manage officers in the field. It is a crucial part of the software that keeps officers alert and safe. Law Records Management Software (LRMS) is where reports are added into a database that

keeps track of all calls to locations, all calls on people, as well as a reference area for officers researching old cases. LRMS records retention allows the organization to stay in compliance with state and local requirements set forth for records retention.

MDTS & MODEMS

Each car in the field is equipped with an MDT (mobile data terminal) and modem. There are approximately 60 MDTS in the field that are used 24/7 to access several Police software programs including Mobile. Each MDT is equipped with a Verizon modem. Each modem is configured with a static IP to allow secure access to our Mobile Message Switch which connects our MDTS to our Mobile server and Virginia State Police's VCIN/NCIC. These MDTS are independent of the Town Network at this time. Prior to MDTS, officers were required to take written paper reports in the field. Once MDTS were introduced, officers in the field were able to take part in electric report writing which saved time and resources for officers, records staff, supervisors, and dispatchers. The MDTS are used on a 24/7 basis and often require replacement much more often than average laptops purchased. The police departments has handled all purchases of replacements for these devices and purchases several each fiscal year to cycle out old ones and introduce newer models.

CAMERA SYSTEM (AVILOGN/PELCO)

The Police department is equipped with several IP cameras in and around the facility to monitor activity in and near the station. These camera systems work as a security feature for our environment protecting those outside and in the building. A DVR is attached to the camera system capturing video for future reference if a request is placed.

TREDS (TRAFFIC RECORDS ELECTRONIC DATA SYSTEM)

TREDS is our accident reporting software that is provided to us by the State of Virginia. All accidents that happen within Leesburg must be documented and submitted to the State for statistical purposes. The accident reporting is also helpful and requested by insurance companies for accident claims.

DRAFT

P&R

RECTRAC

The Parks and Recreation Department utilizes RecTrac as a fully integrated management software system. We use it for Activity Registrations, Pass Management, Facility Reservations, Merchandise/Point of Sale operations and locker rentals. Some of its general features are:

- Over 500 standard reports with multiple selection criteria
- Reports output to PDF, Word, and Excel formats
- Email any receipt or report
- Cash/GL reporting and interface with MUNIS
- Mass email to patrons with important information

RecTrac is used on a daily passes by the Parks and Recreation Department for all of the uses listed above. We currently have over 70,000 accounts in our database. In addition the Department sends g/l reports to Finance Department daily using an interface with MUNIS.

In 2005 the Department implemented WebTrac, which is an online portal that allows the public to register for classes conducted by Parks and Rec. This accounts for approximately 30% of overall class registrations and over 70% during the first week of registration each session.

The Parks and Recreation Department began using RecTrac on February 1, 1995. The orginal version was a DOS-based system with credit card processing done as a separate process. Currently RecTrac is installed on 36 work stations throughout the Department with credit card processing integrated into the software.

The Department pays an annual maintenance fee for the software which entitles us to upgrades to the latest releases of the software. Vermont Systems, Inc. (proprietors of RecTrac) normally releases a major upgrade every 2 years. Parks and Recreation usually upgrades every 3 years to allow any bugs that accompany a new release to be worked out. We currently used RecTrac version 10.3 (the latest release) and will likely do so until about 2015. Vermont Systems scheduled release of the newest version (working title RecTrac 2.0) is due out in the summer of 2014.

IDA LEE WEBSITE

The Ida Lee website, www.idalee.org is currently managed through the CMS system that is utilized by the rest of the Town of Leesburg. The Department utilizes the site to provide important information to the public regarding upcoming events, registration schedules, fitness schedules, classes, special events and more. P&R uses the news and events portions of the software on the front page to provide additional detailed information about the department. It is especially useful in publishing our “Leesburg at Leisure” brochure four times a year and also provides a link to WebTrac, our online registration system. Inside the Department each division is responsible for their portion of the website (i.e. sports/fitness/recreation classes, aquatics, etc). Training is provided as needed by Systems Technician.

With the rest of the Town, the P&R Department began directly overseeing www.idalee.org in September 2008 with the implantation of the CMS system by our IT Department and Vision Internet. Prior to this the IT Department had control of all website information with P&R having some limited ability to edit the front page of the website.

DRAFT

The Town is probably ready for an update to the software, hopefully with greater ability to easily post video and an easier user interface. The main difficulty is not with the software itself, but with the information infrastructure, and the way the site is organized.

SPECIAL EVENTS WEBSITES

The Airshow currently operates on a separate CMS from the Town of Leesburg site, under the address of www.leesburgairshow.com. It is currently maintained by Town staff. The Flower and Garden page does have an external address: www.flowerandgarden.org but directs visitors to the existing Town page for the event. By having these dedicated addresses, it allows vendors and event goers quick, searchable access to the events and a memorable website. Very few people realize these events are produced by the Town of Leesburg and thus do not use the Town website for access to event info. All other Town events are limited to the Town website for web presence.

The Airshow site was built for the event in 2011 using Joomla software however the contract was aborted during the transition phase of the Town taking ownership of the site. Demand letters ensued, payment was withheld while Jeannette was consulted. As a result, the site was never fully migrated to the Town and eventually hacked and has now been rebuilt by Town IT staff on a WordPress platform. In regards to Flower and Garden, we had hoped to use the wireframe originally developed for Airshow however due to the issues that arose, that never happened. After working with IT to explore internal options, it was decided that an RFP should be developed to construct a new website and is currently out to bid.

We desperately need a better functioning webpage for Flower and Garden. The size and scope of that event requires a better web presence that cannot be provided if buried within several layers of a government site. The Airshow site is functioning well so far, however the user ship by Town staff is limited due to lack of training.

DRAFT

UTILITIES

GIS

Utilities Department's GIS water and sanitary sewer layers provide a centralized database of Town Utility infrastructure. The Utilities Department's GIS water and sanitary sewer layers have been built and populated over the years through various contracts with mapping contractors. The last contractor updates were performed in February 2010 and since then all GIS layer updates have been performed in-house. The Utilities Department's GIS water and sanitary sewer layers are continuously updated from current and historical construction drawing information as well as through GPS field data collection. One obstacle is that the current desktop GIS only allows for a single user to perform edits and updates, and the system locks others out to protect data integrity. GIS is read-only to others during an edit session. GIS Server must be brought on-line to facilitate "versioning" of the Utility Department GIS layers allowing multiple users to edit and update metadata simultaneously. Update GIS to latest version 10.1 or 10.2. Cloud based access to the GIS layers can then be set up so Town users can readily access Utility Department infrastructure metadata via a web browser. This will necessitate a fully functional mobile solution (IOS or Android or phone or tablet or laptop) to allow access to information from anywhere in the Town's service area.

SCADA

The Water Pollution Control Facility (WPCF) SCADA system was implemented in 1995. The Kenneth B. Rollins Water Treatment Plant (WTP) began using a SCADA system in 2000. Each plant uses SCADA to monitor and control all aspects of plant operations. SCADA systems were implemented as part of each plant's upgrade following industry standards at the time. Our WTP and WPCF consultants have recommended the existing SCADA systems be updated to take advantage of newer technology and more functionality. Also, the current SCADA vendor is no longer U.S. based and system component replacements are getting more expensive and sometimes are difficult to locate.

AMR

The Hexagram / Aclara automated meter reading (AMR) system started in 2003. Through a network of 18 antennae within the Town's service area, the AMR computer contacts each water customer's water meter twice daily to collect water consumption data wirelessly for use in water billing. The AMR system provides an accurate means of collecting water meter readings without the need for Utility personnel to visit and manually read each customer's meter. Utility personnel can focus on Utility related work projects. Aclara releases periodic software updates and requires an annual maintenance contract. Recent hardware upgrades are being installed within the antennae network and Utility personnel are replacing each water meter's reading interface. No more hardware upgrades are anticipated in the near future.

SANITARY CCTV

The WinCan closed circuit television (CCTV) video program began in 2003. WinCan allows for camera inspections of sanitary sewer mains and laterals to verify correct installation of pipes and manholes, to determine and rate pipe material integrity, and to locate where repairs or replacements are warranted. The CCTV operators are periodically called upon to inspect storm sewer pipes when problems are suspected. WinCan CCTV was introduced to help locate Inflow & Infiltration (I&I) sources entering the Town's sanitary network. WinCan allows operators to view installed pipes to find where groundwater or

illegal storm connections are entering the system. Once located, I&I sources are plugged and / or eliminated to reduce the volume of clean water entering the system thus reducing treatment expense. WinCan has grown into a valuable inspections tool to confirm proper watertight installation of sanitary sewer pipes, laterals, and manholes before contractor installed infrastructure are accepted into the Town's inventory. At the end of the last fiscal cycle, the WinCan desktop version was upgraded to allow it to interface with GIS. However, it still works as a single-user desktop version. Migrate this WinCan GIS version to the new GIS SQL server to improve its performance and allow access by multiple users.

DRAFT

TRAFFIC MANAGEMENT SYSTEM

Public Works' current Advance Traffic Management System is based upon Closed Loop Multi Arterial Traffic System or CL Mats for short. The original concept was a system for Peek end users to create and maintain data bases of traffic intersections and directly control all functions remotely while logging data and monitoring traffic in a real time aspect.

The Town's implementation of the system was scaled back based upon monetary concerns, deploying 8 of 38 intersections utilizing dial up and fiber communications to 8 intersection, S. King & Evergreen Mill, S. King & Clubhouse, S. King & Davis Ave, S. King and Loudoun, S. King & Market, W. Market & Catoctin, E. Market & Plaza and E. Market & Ft. Evans.

The placement of fiber communications to the 3rd floor, the master computer and printer and analog phone line installed completed the system components for communications to the field. The field communications used earlier dial up communications with the addition of Comcast (formerly Adelphi) fiber through a franchise agreement.

Immediately after the systems fiber went on line, the Catoctin Circle intersections from E. Market to S. King, including Fairfax St., were placed under fiber communications to the central computer at Town Hall 3rd floor under the designation of Master 3. In the meantime the Edwards Ferry section from the Bypass east to Costco had fiber, new controllers and cabinets installed, all interconnected under an On-Street Master (#2) via a dial up connection to Town Hall.

As the progression of signals and construction of new signal increased, the data base grew from 8 initial signals out of 38 to 53 intersections in the data base. The varying degree of communications between signals and systems has fast outpaced the communication capabilities of the legacy equipment in use. Redundant specifications pertaining to the Controller, cabinet, detection and communications has been put into place to ensure upward compatibility while still maintaining current communications utilizing the current CLMATS software.

All new signalized intersections and roadway projects are looked at to see if communications between signals current and future are covered to defray any overall one-time costs future costs utilizing the current communication protocols (fiber is the choice).

Currently, the Town of Leesburg uses Peek M3000 masters, LMD 9200 series controllers and Double Diamond CMU or MMU monitors for traffic control. The LMD series, while functional, is fast becoming obsolete based upon the fact that the unit is no longer in production and repairs are limited based on obsolete parts. The replacement compatible version is the 3000E series controller, which also has a limited life future due to component procurement. Newer equipment is becoming available following the NTICP communication protocol and newer components which are compatible with the current intersection hardware Leesburg uses while still complying with VDOT requirements.

The current system can be broken down into 4 sections, Control, Detection, Data collection and Communications.

1) Control is to provide the smoothest possible service for all signalized locations.
2) Detection is used to provide a timely manner to service all vehicles.
3) Data collection is used to update the control portion and confirm traffic flow in and around Town.

4) Communications allow one central location to have remote monitoring, control, detection and data collection seamlessly.

The current communications of choice consists of a multiple fiber infrastructure put in place with the installation of major developments and/or road projects. This communication media is not fully utilized due the constraints of the CL MATS software and the LMD controllers, locked in at the top speed of 9600 baud, (AOL made millions off of dial up speeds of 57000baud connections to the internet), and the limited bandwidth out to the street. Current discussions to "upgrade" communications has evolved into the use of Ethernet communications.

Currently we are implementing and testing the use of Ethernet to do the following:

1) Faster, more reliable communications between traffic controllers.
2) Minimize cost in purchasing and maintaining legacy communication devices.
3) Open up the bandwidth to the police department for remote video monitoring and surveillance over existing fiber infrastructure.
4) Interconnect more signals under direct communications vs. dial up.
5) Communicate with serial devices within the cabinets remotely.
6) Set the communication platform for the "next step" in traffic controller replacement.
7) Remote monitoring for all equipment including cameras.

The use of Ethernet communications will reduce the current fiber modem costs while increasing user productivity and responses, essentially allowing future communications to be "bridged" wirelessly and still remain secure.

DRAFT

APPENDIX C: IT DEPARTMENTAL SURVEY RESULTS

IT Departmental Survey Results

From April to July of 2013 an evaluation of the town's IT was performed through the use of a survey. Results were collected through in-person interviews and by email. In total 33 surveys were completed.

Survey used:

TOWN OF LEESBURG

INFORMATION TECHNOLOGY DEPARTMENTAL SURVEY

Department Name:

Employee Name:

Employee role / title:

What are the primary functions of your department?

What IT systems and software are you dependent on?

Which IT systems are mission critical to your operation?

Are they meeting your expectations? If not, why not?

Is there any technology you would like to see implemented in your department?

How would you rate your current IT support on a scale of 1 to 5 with 5 being the highest?

Why did you select this rating and what suggestions for improvement can you offer?

What are your expectations of the IT Department?

How would you characterize IT response?

What do you dislike about the current IT Support?

Have you received any feedback from your staff about IT that you think should be included?

What has your experience been with MUNIS since the changes made (migration to the cloud) in 2011?

Do you have any thoughts about the town website both in terms of use by residents and employees?

What do you hear back from people that they would like to be able to use on the web?

Notes / Additional Comments:

DRAFT