

# Henry County / PSA Technology Assessment 2016-2017



Christian Youngblood, Director  
Henry County, Virginia  
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## Executive Summary

It has become increasingly common to find stories in the news about businesses being hacked and losing control of their confidential information. Others have made the terrible mistake of opening a suspicious email and unwittingly encrypting all of their organization's data. In today's political climate, one might answer by building a digital border around their company and disconnecting all connections to the Internet, locking down all computers so that even a background could not be changed. How is the Technology Department to function efficiently while continuing to serve its intended function?

At Henry County, the Information Services (IS) Department continues to protect our resources while serving our customers by adhering to best practices, such as performing routine backups, using multiples means of media, with copies being stored off-site. Our users receive regular education to minimize the possibility of a scam being utilized successfully against us and we deploy anti-virus and email scanning software throughout the organization. A centralized, modern-firewall separates all of our systems from the Internet and we use a patch-management system to ensure that all computers receive the latest software updates.

Each new technology we are asked to implement will bring new risks to our organization and must have the pros weighed against the cons. We need to determine, is this item useful or just cool? Is it going to actually serve the organization or is it for personal use? It is important to ensure that we are not allowing something new just for the sake of it being available and only relevant products should be introduced.

Based on the concept of planning being the best prevention, we have added Project Management Professional (PMP) skills to our toolbox as one means of answering these questions. By obtaining the education and certification of a PMP, we are now better equipped to prepare business cases for projects (is it cost-effective?) and complete the necessary risk assessments (is it worth it?) that are needed to make informed decisions.

Sometimes we do not get a choice in what technologies will be implemented, perhaps due to a governmental mandate or a legacy system that cannot be terminated because it has no available replacement. As such, we are forced to adapt and support whatever comes our way.

Fortunately, due to a retirement in our department, we replaced a traditional "Desktop Technician" with a "Technology Support Specialist." This position allows us to concentrate on supporting all of the devices that are needed for a modern-day organization, good and bad.

A goal of the IS Department is to provide all the technology tools needed to serve the Citizens of Henry County, the customers of the PSA, and the Employees that work with us, while providing the best possible protection to our systems that run those technologies. It would certainly be easier to disconnect all the networks, turn off all email, and replace every computer with a typewriter, but we cannot live a life of fear. If we do, the digital terrorists will have beaten us.

-Christian Youngblood, PMP

Director of Information Services

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## Mission

*When it comes to any Technology need, the Information Services Department will be the agency that our users **want to call**, not who they **have to call**. Our reputation for service will be superior to that of any outside agency and we will take pride in keeping it that way.*

## Goals

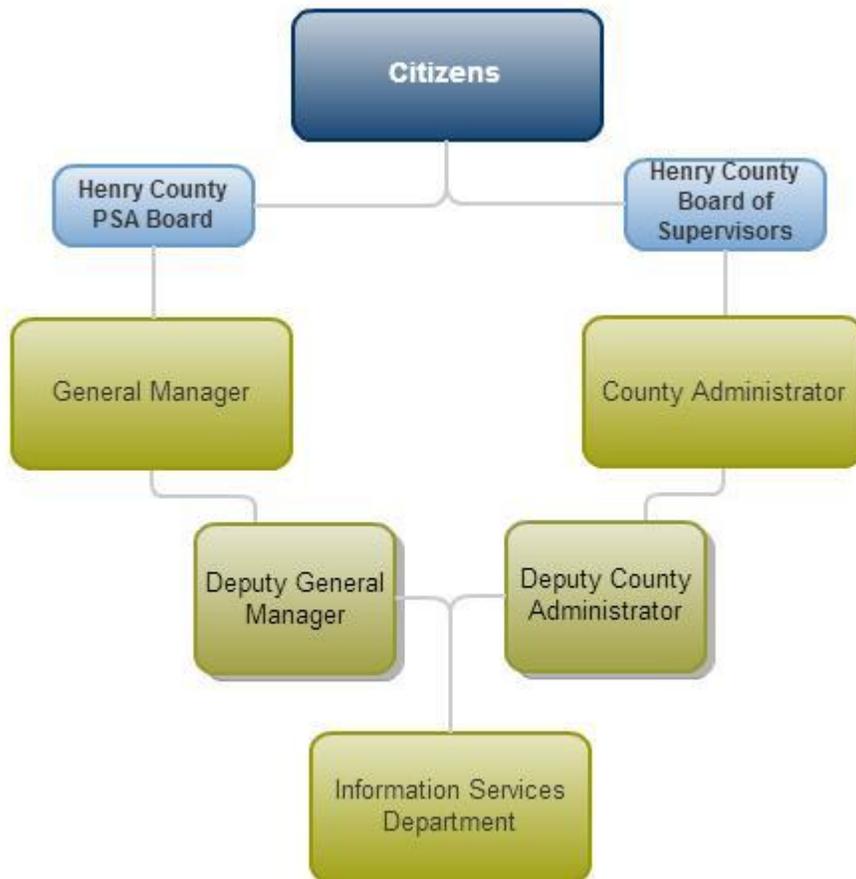
The following 4-goals will be the defining guidelines of the Information Services Department

- We will always be cost-conscious of our expenses to ensure that our Citizens' money is used wisely. We will use internal staff when justified while being mindful of activities that are more cost effective to outsource. We will create and manage numerous vendor relationships to ensure competitive pricing for equipment and/or services that we must purchase. We will repair items when cost-effective and disband legacy systems/components once they are no longer efficient.
- Continuing education in Technology will be of paramount importance for the Information Services staff and will be extended to all Henry County & PSA personnel. We will strive to stay abreast of both current and emerging technologies while retaining the skills necessary to support our legacy systems.
- We will provide the employees of Henry County and Henry County PSA reliable equipment by creating and adhering to a responsible Capital Improvement Plan (CIP). Additionally, maintenance agreements will be used to increase the life-span on essential equipment while it remains technologically relevant.
- We will provide all the technology tools needed to serve the Citizens of Henry County, the customers of the PSA, and the Employees that work with us, while providing the best possible protection to our systems that run those technologies.

## Organizational Chart

Both Henry County and the Henry County Public Service Authority (PSA) fund the Department of Information Services. The Team serves each organization, the Citizens of Henry County, and the Customers of the PSA. The members of the Information Services Team include the following:

Director, Christian Youngblood  
ERP Coordinator, Steve Isom  
Systems Analyst, Mark Alley  
Desktop Technician, Charlie Brown  
Technology Support Specialist, Drew Nolen



## Services / Technologies Supported

The Information Services Department supports many pieces of Technology that are commonplace for most organizations. Implementation and maintenance requires skilled coordination, project management, and execution to ensure the reliability required by Henry County, PSA, 911, and other departments. Examples include:

- Desktop PCs, printers, scanners, & other peripherals
- Laptops, tablets, & smartphones
- Servers (physical & virtual)
- Network services (user authentication, file services, antivirus, etc.)
- Software applications (MS Office, Adobe Acrobat, Google Chrome, etc.)
- PBX telephone system
- Email and websites
- MUNIS Enterprise Resource Planning (ERP) financial system

In addition to these “standard” items, the Team must support many more proprietary Technologies that require constant retraining and dedication of resources. Examples include:

- Mobile Data Terminals (MDTs) for Law Enforcement
- GIS services
- Body cameras / car cameras
- Parks and Rec reservation/management system
- Employee Self-Service for our Staff
- Customer Self-Service portals for our Citizens
- Computer Aided Dispatching (CAD) for 911
- Jail Management and Sheriff Management software
- Mobile devices, both County issued and personal
- Audio/Visual equipment
- Custom software (Jury Maintenance, Law Accreditation, Incident Management, etc.)
- Document archiving

By the numbers, the Technology Department is currently supporting the following devices:

- 437 Workstations (desktops or laptops)
- 45 Mobile Data Terminals (MDTs)
- 28 Servers (13 physical, 15 virtual)
- 346 Email Accounts
- 455 Telephones (Desk phones)
- 227 Mobile devices (smartphones and tablets)

Computers	
Year	Qty
<2010	50
2010	22
2011	32
2012	49
2013	50
2014	62
2015	70
2016	46
2017	36
2018	20

## Technology Team Stats

The Information Services Team uses an in-house ticketing system (TeamManager) to track all requests for service (repair, instruction, information, etc.).

The Team resolved 4,319 incidents, spread across 10,009 devices, from January 1, 2016 through December 31, 2017. Service requests range from simple tasks, such as resetting a password or clearing a paper jam, to complex tasks like reconfiguring all of our wireless access points (WAP).

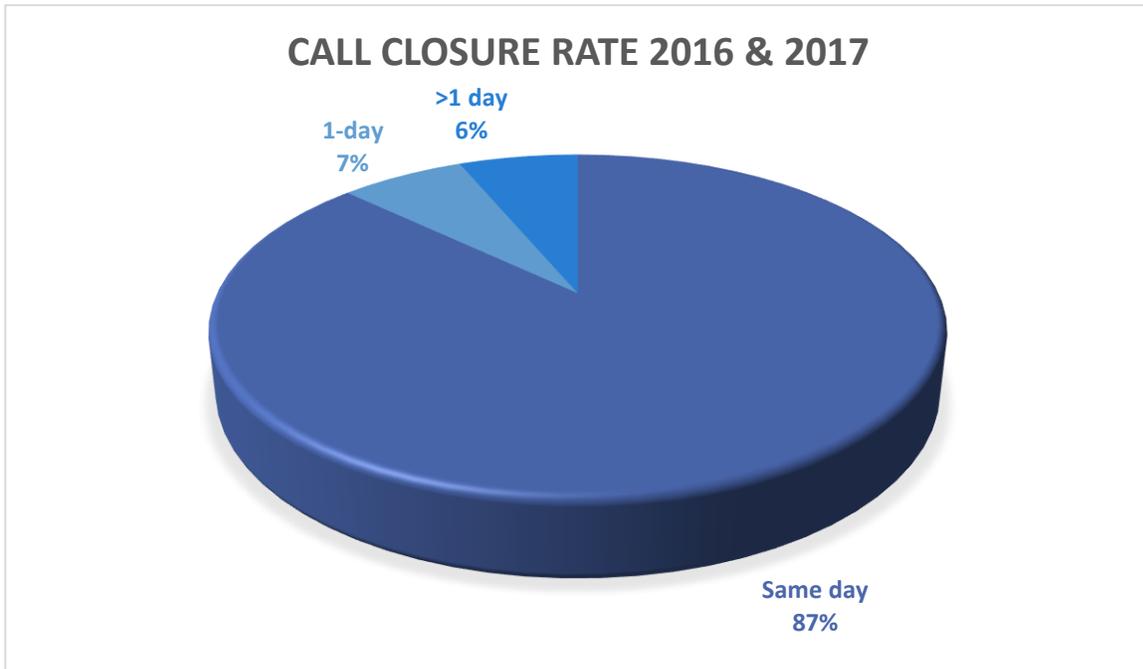
The five departments that requested our services the most this cycle (most to least) were: Sheriff, Treasurer, School Board, Public Safety, and 911/Communications. Combined, these departments accounted for approximately 47-percent of all service requests / incidents.

Most incidents (87.1-percent) were resolved the same day while 6.6-percent were resolved the next. The vast majority of calls that were not closed the same day were attributed to sole-source vendor supported products, including our ERP provider and telephone carrier. Other delayed closings were attributed to delays in receiving non-inventoried parts to repair out of warranty equipment.

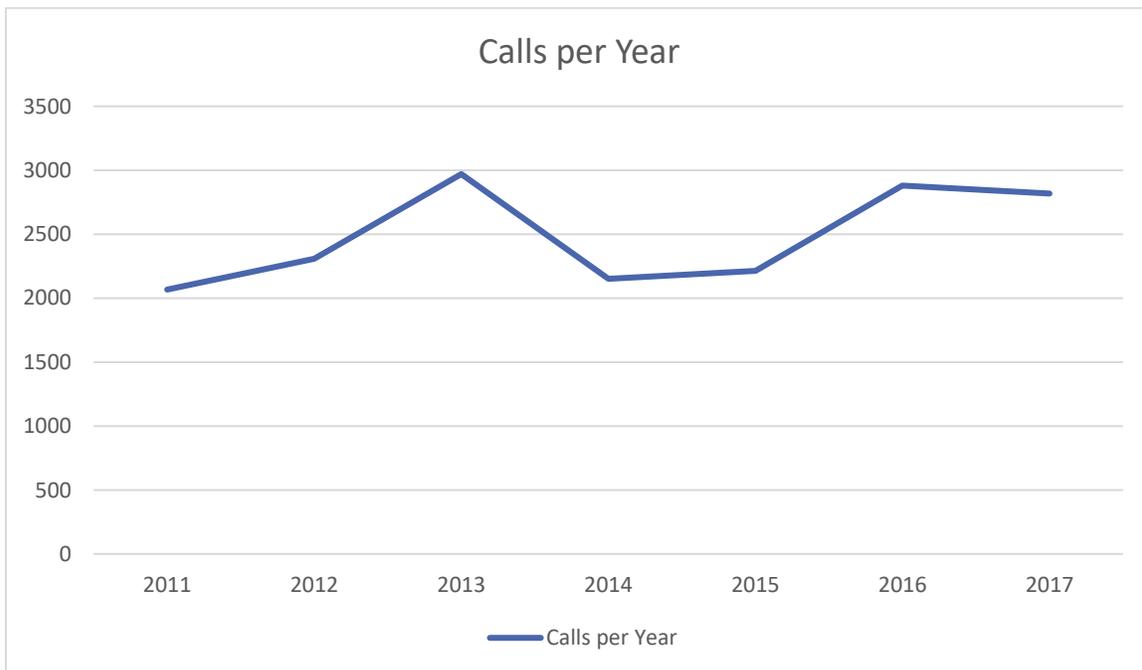
## Who Do We Serve?

*!!!CITIZENS!!!*

Accounting / Finance  
 Animal Control  
 Assessment / Real Estate Department  
 Board of Supervisors  
 Building & Grounds  
 Building Inspections  
 Commissioner of the Revenue  
 Commonwealth Attorney  
 Cooperative Extension Agency  
 County Administration  
 Court Services  
 DRBA  
 Elections  
 Engineering  
 Gateway Streetscape  
 GIS / Mapping  
 Human Resources  
 Jail  
 Magistrate  
 Martinsville-Henry County 911  
 Parks and Recreation  
 Planning & Zoning  
 Public Safety  
 Public Service Authority (Customer Service)  
 Public Service Authority (Maintenance)  
 Purchasing  
 Radio Shop  
 Safety / Compliance  
 School Board  
 Senior Services  
 Sheriff's Department  
 Social Services  
 Special Projects  
 Treasurer



Total requests for service may vary greatly from one year to the next. Complex projects, such as the Windows 10 upgrade in 2017, are factors in generating extensive call volume.



## Accomplishments 2016-2017

The job of a Technology Department is never complete. Upgrades and patches are released for existing applications regularly. New software is constantly created that requires higher processing power and users always need more storage capacity. Following is a sampling of the many projects that we completed from January 2016 through December 2017:

- Core switch replacement for the entire County network
- Completed Windows 10 upgrade for all eligible desktops & laptops
- Installed and configured a new advanced firewall system
- Installed/replaced 82 computers and 5 servers with new machines; refreshed and repurposed dozens of older computers
- Replaced & upgraded VMware server cluster and shared storage
- Comprehensive phone system analysis in preparation for replacing the County PBX
- New and improved computer imaging solution implemented
- Designed & launched a new County/PSA website that is now compatible with mobile devices
- Reconfigured and managed all cellular devices for Sheriff MDTs for maximum connectivity
- Created a new “preventative maintenance” solution for the Maintenance Department
- Performed major upgrade on RecTrac/WebTrac for Parks and Recreation
- Implemented a new, redundant system for 911 to stay connected to their server in the event of equipment failure or loss of facility.
- Implement a centrally managed storage solution for Sheriff car-cameras
- Completed the migration to a new CAMA system for the County Assessors
- Updated and expanded Wi-Fi infrastructure throughout various County/PSA buildings
- Migrated PSA shop to a fiber-optic LAN connection; migrated dog pound to a point-to-point wireless LAN connection
- Implemented Tyler GoDocs to incorporate PDF usage throughout our accounting system

## Challenges / Needs

Despite the vigilant work of the Information Services Team, we still have a number of challenges and needs that must be addressed in order to continue providing top-quality service. Some of these items will require additional capital funding, while others will simply require additional training of the Technology Department and/or Users. Not all challenges are easily recognizable and, as such, the Technology Team constantly seeks out problems in an effort to be proactive.

**PBX** – Henry County operates our own PBX to support our 450+ telephones and faxes. This PBX has had numerous software upgrades and is currently running the latest software but it is near its end of life. A number of failures have plagued the reliability of the system and parts have become difficult to obtain, while finding a reliable and knowledgeable technician to service the equipment has also become a challenge. Strategy: Henry County has funded approximately half of the cost to replace the PBX in the FY2018 budget with the intention of providing the remaining funds in FY2019. The Technology Department recently completed an extensive site survey to detail all existing functions of the system and worked with a vendor to ensure that our estimate is appropriate. We will soon be preparing an RFP that will allow us to choose a product and vendor to completely replace this aging system prior to the end of December 2018.

**Security (crypto viruses / theft)** – Cybercrime continues to proliferate as criminals realize the potential for money and/or disruptions to service. Organizations (municipalities, hospitals, retail stores, and more) have been forced to pay thousands in ransom so that they could access their own data.

Strategy: The IS Department will continue to secure its contents by implementing industry best practices for security. Specifically, we will maintain current anti-virus software on all computers, update all applications and operating systems in accordance with manufacturer suggestions, and continue educating our end-users to avoid threats. However, we must point out that many Fortune 500 companies (with IT staffs larger than all of the employees working for the PSA and County) have fallen victim to hacks in the past couple of years. We will do what we can to avoid any breach but we will also focus on maintaining an environment in which we can recover from any type of security incident, including crypto scams and theft of data.

**LAN Bridge data usage (Windows updates)** – Each deputy has been provided a dedicated internet device to keep their Mobile Data Terminal (MDT) connected to their incident management system. This allows the Deputy to immediately query license plates when conducting a traffic stop, enter reports, inform 911 of their location, and much more. However, the data plan for these devices is extremely limited and results in the devices being disconnected several times per month due to excessive data use. Because of this problem, MDTs must be brought into the IS Department in order to install critical software security updates.

**Strategy:** Working with the Sheriff's Department, we will negotiate a data plan that allows at least 5-times the current amount of usage. This will allow their software to run without interruptions in service. Additionally, we will install a wireless internet connection in their parking lot so that software updates can be downloaded while deputies are on-site for other matters (i.e. staff meeting, obtaining fuel, etc.)

**Office Licensing** – While the price of desktop PCs continues to decline, the price of software keeps rising. Henry County currently purchases a Microsoft Operating System (Windows) and a Microsoft productivity suite (Office) with each computer. The cost of these two-items represents approximately forty-percent of the total PC cost. Moreover, the software must be repurchased to take advantage of any upgrades.

**Strategy:** The Technology Department will purchase Microsoft Office packages with less features for users that do not use all of the functions, particularly MS Access. Other computers (public access machines) may be suited for a free application suite, such as LibreOffice. We will also re-evaluate if our open license agreement, which allows us to purchase a special license from Microsoft, is more cost effective than purchasing copies directly from our computer supplier.

**Escalating annual software fees** – Both the County and PSA are using the same ERP software for billing, collection, payroll, general ledger, budgeting, and more. The annual fee for this software accounts for the largest, single expense in the Information Technology budget and continues to increase each year. Additionally, new modules typically cost thousands of dollars and are not included in this fee.

**Strategy:** In 2017, we met with our Vendor and re-evaluated our charges, looking for any modules that were no longer used and for any misstated charges. Those savings will be reflected in the upcoming operating budget. In addition, we will look for third-party companies to provide future modules to compare the value of our vendor's product. It may be beneficial to use products from more than one company and build an interface to link them together.

**Continuing education** – Technology is a field that is ever evolving with new products and strategies being introduced and others being pushed to the wayside. A perfectly capable member of the IS Department in 2008 would be near useless in 2018 without updating his/her skills and learning about the newest trends. Some of the certifications earned in 2018 include A+ (hardware & O/S), Cisco Certified Network Associate Security, and Project Management Professional (PMP).

**Strategy:** Continuing education will be a job-requirement of all employees in the IS Department. The Director shall work with each employee annually to identify a mutual area of interest and the employee will be required to obtain a level of mastery for that topic. The department will assist employees in obtaining certifications that are relevant to the employee's position.

**Aging Sheriff/Jail Computers** – Sheriff Deputies use ruggedized laptops as “Mobile Data Terminals” (MDTs) in their cars to improve their efficiency while on the road. Through CIP requests (beginning in 2014), they have done a good job of updating these machines. Desktops have not been included in any type of funding and are generally replaced by IS with used computers. Because we are getting longer lives from our desktops on the County and PSA side, we are not getting many used computers that we can send the Sheriff. The average computer in these offices is now 5.5-years old and has reached their expected end of life.

Aging Report (MDT)		Non-MDT	
Year	Qty	Year	Qty
2010	2	<2010	6
2012	1	2010	14
2014	18	2011	18
2015	24	2012	14
		2013	10
		2014	5
		2015	13
		2016	11
		2017	2

Strategy: Funds to replace desktop and laptop computers should be included in either the Sheriff / Jail operating budget or in the CIP (Sheriff, Jail, or Information Services).

Additionally, any machine that is no longer in use should be identified and removed from inventory. Finally, it appears that a number of users have both laptops and desktops, which could possibly be consolidated into a single device.

## Contact Information

CHRISTIAN YOUNGBLOOD  
DIRECTOR OF INFORMATION  
SERVICES

DALE WAGONER  
DEPUTY COUNTY  
ADMINISTRATOR

TIM HALL  
COUNTY ADMINISTRATOR

[cyoungblood@co.henry.va.us](mailto:cyoungblood@co.henry.va.us)

(276) 634-2502

[dwagoner@co.henry.va.us](mailto:dwagoner@co.henry.va.us)

(276) 634-4604

[thall@co.henry.va.us](mailto:thall@co.henry.va.us)

(276) 634-4600

### Henry County / Henry County PSA

P. O. Box 7                      -OR -                      3300 Kings Mountain Rd

Collinsville, VA 24078

Martinsville, VA 24412

Tel (276) 634-4600

<http://www.henrycountyva.gov>

