

INFORMATION TECHNOLOGY

Description

The Department of Information Technology is responsible for serving all computer-oriented information processing needs of County agencies. This includes information and office automation equipment selection, application development and/or software selection assistance, ongoing hardware and software maintenance, and data and telecommunications network development and support. The computer center now operates twelve hours a day, five days a week. Major areas of service include Finance, Community Development /Operations Agencies, Human Resources, and all Public Safety agencies. IT's Help Desk provides assistance to agency personnel on any computer related problems.

The Department also administers and maintains the County's security cameras and audio-visual, and telecommunications infrastructure including telephone systems, mobile devices, and the voice and data plant. In addition, the Department is responsible for the maintenance and support of the Emergency E-911 system for Public Safety and the management of the County's Geographic Information System (GIS).

Objectives

- To provide enterprise server based computer capabilities to County agencies.

- To assist County agencies in increasing efficiency and effectiveness through the use of advanced technological tools for administrative and field operations.
- To provide application development and/or software selection services.
- To maintain operational efficiency through the use of state-of-the-art equipment and software.
- To administer the Department's information technology resources in a manner that best serves the County's operational and customer service needs.
- To maintain the highest level of proficiency of staff in all areas of technical support.
- To host and support various enterprise applications, including email and Internet connections, to all County agencies.
- To monitor, maintain, and upgrade the County's local and wide area network (LAN/WAN) as efficiently and effectively as possible.

Annual Fiscal Plan

| <u>Description</u> | <u>FY16 Actual</u> | <u>FY17 Original</u> | <u>FY18 Approved</u> | <u>Change 17 to 18</u> |
|---------------------------|------------------------|--------------------------|--------------------------|----------------------------|
| Personnel | \$ 8,251,566 | \$ 9,091,227 | \$ 9,994,002 | 9.9% |
| Operation | 3,633,219 | 3,595,595 | 4,052,806 | 12.7% |
| Capital | 719,666 | 522,215 | 522,215 | 0.0% |
| Total | <u>\$ 12,604,451</u> | <u>\$ 13,209,037</u> | <u>\$ 14,569,023</u> | <u>10.3%</u> |
| Personnel Complement* | 91 | 91 | 97 | 6 |

*One position was transferred from General Services in May 2016 and five employees transferred from Finance during FY2016-17.

Performance Measures

| | FY16 | FY17 | FY18 | Change 17 to 18 |
|--------------------------|-------------|-------------|-------------|----------------------------|
| Workload Measures | | | | |
| Website Visits | 2,710,279 | 2,809,444 | 2,910,992 | 101,548 |
| Website Unique Visitors | 1,322,134 | 1,488,911 | 1,657,036 | 168,125 |
| Website Page Views | 7,182,959 | 7,447,196 | 7,726,672 | 279,476 |

- To manage GIS technology to enhance coordination of Community Development services among County departments.
- To provide the County with an efficient and dependable telecommunications network.
- To administer, maintain, and enhance the County's security camera and audio-visual systems.

During FY2017-18, the **IT System Admin Team** will continue to expand and upgrade its virtual server environment. Currently IT has approximately 375 virtual servers running on 19 physical servers. IT successfully migrated the majority of the virtual server workload to a new blade-based, converged infrastructure platform reducing both the number of servers needed as well as the associated power and cooling requirements. The County also has 85 physical servers but hopes to reduce that number further by moving additional workloads to virtual servers.

Budget Highlights

The Department of Information Technology's (IT) FY2017-18 budget totals \$14,569,023, which represents an overall increase of \$1,359,986 or 10.3 percent from the previous approved budget. This increase was driven by the personnel component, which increased by \$902,775 or 9.9 percent. This increase reflects the addition of five IT staff members that transferred from Finance during FY2016-17 and one IT staff member that transferred from General Services in May 2016. In addition, this component reflects a 2.5 percent salary increase for FY2017-18 and rising health care costs.

IT expanded operations to include a formal Disaster Recovery (DR) site using a 3rd party co-location company, located within Henrico County. This now allows IT to directly replicate County data offsite and have core resources to bring up critical Public Safety and County business applications and services at reduced capacity should there be an event impacting the main data facilities.

The operating component totals \$4,052,806 for the FY2017-18 budget and reflects an increase of \$457,211 or 12.7 percent from the previous fiscal year. This component includes several budget adjustments. The first increase of \$252,285 was made in order to accommodate planned increases in the annual maintenance contracts for several Enterprise software products. The second adjustment of \$200,000 was for the annual maintenance associated with the Enterprise Land Management software which will begin in FY2017-18. The last adjustment of \$4,926 was for expenses associated with the position that was transferred from General Services. The capital component remains constant, totaling \$522,215, which will allow for the purchase of new and replacement computer equipment as well as furniture replacement needed for the department.

In keeping with IT's movement toward the use of remote servers, the **IT Database Team** has moved 83.0 percent of over 294 databases to virtualized servers running Microsoft SQL Server 2014. This version will be supported by Microsoft for at least the next five years. All Police reporting systems, Computer Aided Dispatch, the Sheriff's Office Medical Service, Libraries, and Circuit Court Land Record databases are now running in a high availability architecture at multiple facilities including the new DR site. This architecture allows one facility to suffer a catastrophic anomaly but permits the databases to continue to operate.

The **IT eBusiness Oracle Team** continues to improve the County's Oracle Infrastructure. The purchase and deployment of Oracle Database Appliance (ODA) is continuing to show significant return on investment for Oracle database and applications environments. IT is in the process of deploying several virtual machines on the ODA, which would eventually replace the

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machines that currently serve Oracle applications. This year, IT started utilizing an F5 load balancer to efficiently route traffic to various applications. This technology has the ability to secure access and enhance the speed of the application for the user. The department has also upgraded the core Oracle database infrastructure to the latest 12c version. IT is now working on getting all of their databases upgraded to this version. During the next half of 2017 IT will work on upgrading the applications environment to future versions and migration into Oracle's mobile applications development framework.

The **IT Finance Support Team** collaborated with Finance and Public Utilities to successfully complete the outsourcing of printing tax bills, utility bills and real estate assessment notices to Wells Fargo. A request for proposal to replace the current cashier and delinquent tax collections applications was awarded this past year with a planned implementation for later in 2017. Other initiatives being worked on for 2017 include eBill Presentment for taxes and various development work to upgrade technology being utilized for various business processes within the Department of Finance.

In FY2015-16, the **IT Network/Telecom team** completed the migration of many remote locations' (WAN sites) data connections from legacy Verizon TLS to Comcast ENS, which resulted in reduced costs for like services. A new connection was added to the DR site and all necessary routing and switching was added to that facility. Information Technology also completed the process of moving all of the County's phones from the legacy analog PBX to a new Voice Over Internet Protocol (VoIP) platform, which included the addition of the CHPL and CRWP phone systems into the County's overall system. Voice circuits have been migrated from legacy copper-based circuits to new fiber-optic Session Initiation Protocol (SIP) trunks. Included in the VoIP project was the migration of all of the County's automated call distribution (ACD) queues, from the Legacy platform to the new VoIP platform, which included the addition of new queues and auto-attendants for many departments which did not previously have these systems. Reports from those agencies have shown an overall reduction in calls that agents are managing due in a large part to the new service oriented layouts and designs of these auto-attendants and call queues. Information Technology also implemented physical redundancy to each of the network closets in the Western Government Center (WGC), by utilizing the new fiber-optic cable between WGC and County

Training Center to "dual-home" the network closets between buildings. Information Technology will be working to complete this same "dual-home" project for the network closets at CTC/PSB in the upcoming fiscal year. Also, Information Technology is in the process of migrating the County's security camera systems from legacy analog systems to a new IP-based digital system.

The **IT Web Team** completed a major restructure and redesign of the County's website, replacing the previous design used for the last seven years. This new design fully realizes the 'service first' organizational structure started in 2015. The design presents a refreshed look for the County's web presence, as well as several new features. Some features include a fully responsive mobile experience, search improvements to help discovery both on and off the site through major search engines, and implementing various standards for website accessibility. Developers used modern web standards, tools, and practices to provide enhanced usability as well as providing a platform to support future revisions of the site.

Members of the web team have also joined with other staff to further the implementation of SharePoint and other Office 365 features throughout the County. A new intranet was built out for IT, as well as several departments have started the onboarding process of planning an information architecture as well as moving content to team sites in SharePoint. The team has been focusing on documentation, governance, and use cases for various agencies with general availability in the next year.

The **IT Help Desk** provides multiple tiers of technical support for County-owned hardware and software. The support is provided via telephone and deskside visits from technicians. During 2016, the Help Desk received 5,406 tickets via the Kace ticketing system. The average of 450.5 tickets per month does not include other departmental queues such as General Services or Recreation & Parks.

The **IT APEX Group** built four new in-house Oracle Application Express (APEX) systems for four different agencies. These include the Electronic Billing for Leasing Company System for Finance, Media Tracking System for Information Technology, Connection Fee Archive System for Public Utilities, and the Time Management System for the Commonwealth Attorney's Office. Four new APEX projects are in the works for three different agencies

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including the Customer Tracking system for the Permit Center, Liquid Hauled Waste and Lien Tracking systems for Public Utilities, Card Access Request Tracking system for General Services. The APEX team also provided support for tracking Police costs during the 2016 Winter Storm Jonas. IT supports over forty APEX applications used by every agency in the County.

The IT Community Development & Services Team, in collaboration with Purchasing and the Tidemark Replacement Committee, issued a request for proposal to obtain an Enterprise Land Management Solution (ELMS), to include permitting, land management, code enforcement, and public maintenance management. Seven proposals were received and evaluated. Vendor selection is expected in early 2017. The team also worked with the Development Review Committee to enhance the Plan of Development and Subdivision review processes in Tidemark. Added functionality includes a new plat review process and a new reporting system, which gives County management the analytics necessary to effectively manage staff, track review timeliness, and enhance business processes.

The IT Public Sector Reporting Team enhanced collaboration with the City of Richmond and Chesterfield County by developing an Aviation application for the Police Division. The application allows the multi-jurisdiction staff to enter and track flight, maintenance, and expense data for aircraft. Henrico County's flight data is tied to the associated Call for Service system and available on the TEMPO Dashboard. Expanding the reporting applications used by the Public Safety agencies, the Commonwealth Attorney Tracking System (CATS) was added to the suite. CATS allows the staff to quickly create new cases by importing defendant information obtained during the booking process. Cases are tracked through the judiciary process and associated documents are created using templates. Based on data integration, the Henrico County Commonwealth's Attorney Office is the only jurisdiction in Virginia which chose to implement a custom application as the replacement for the unsupported state application.

The IT Computer Aided Dispatch Team made numerous enhancements to the Cad24x7 system during the past year. Highlights include the development of a Fire Dashboard webpage which is a customized mashup of fire call and unit status tabular data with a web map showing the same information.

The dashboard also features a resource board, weather information (including radar) and shows the current EOC and Fire operations level. A mutual aid recommendation capability was added to allow CAD to accurately recommend the best units to respond when providing mutual aide to a surrounding jurisdiction.

The **IT GIS Office** has had several major accomplishments during the past year. Highlights include the establishment of an open data portal, <http://geodata.henrico.us>, which provides the County's citizenry a self-service website for accessing and downloading GIS data in the public domain. This data is provided free of charge. This site also benefits the County by automating the dissemination of information that formerly took considerable staff time to prepare. In December, the GIS Office implemented a major improvement to its online routine capability by inclusion of access road information into its primary street network. This allows for more exact routing to almost every address in the County and will be greatly beneficial to the many applications which utilize routing including the 9-1-1 center and first responders. GIS also provided a separate routing network for interstate locations which is based upon the statewide Virginia Geographic Information Network (VGIN) network dataset. This enables County services to leverage the closest points of access to the interstate highways even when these entrances are outside of the County. A new online County GIS map viewer was developed in-house by the GIS Office and deployed on the County's website. This map viewer features, among other things, enhanced aerial photography including birds-eye-view (Pictometry) views as well as historical aerial photography since 1998.

IT also supports the E-9-1-1 telephone system and the voice recording system both of which are used in the 9-1-1 Emergency Communications center and both vendor-provided systems. Both also required technology upgrades during 2016. IT's role was in the project management aspects of the upgrades which involved planning, coordination and control. The project was successfully concluded earlier this year. The 9-1-1 telephone upgrade is almost concluded and will be followed on in 2017 with two exciting projects involving a multi-node implementation with the City of Richmond which will provide a very robust backup capability for both jurisdictions and with the County's portion of a regional text-to-911 project.