



VI.

Agenda Item

## County of Hanover

**Board Meeting: May 28, 2014**

**Subject:** Presentation - Information Technology Department 2014-2019 Strategic Plan

**Summary of  
Agenda Item:**

The IT 2014-2019 Strategic Plan defines goals, objectives, and strategies intended to support the expansion, enhancement, and delivery of technology and services for Hanover County citizens, businesses, and employees. The Strategic Plan provides the foundation for how IT will lead information technology innovation over the next 5 years. The Plan promotes the basic imperative that IT should be in the business of helping people by providing a more productive and efficient computer information system environment through the use of the latest technology.

Hanover County has established a strong information technology environment and has developed a team of dedicated information technology professionals. This Plan seeks to build on this success. In addition, this plan builds on our joint efforts with our partners at the Hanover County Public Schools.

In developing this Plan IT held work sessions to identify the most challenging technology issues that the County will face over the next five years. In addition the Department developed a GAP analysis to identify opportunities to optimize performance and a SWOT analysis to identify strengths, weaknesses, opportunities, and threats to the County's information systems. These analyses formed the basis for the goals, objectives, and strategies included in this Plan, including the following goals:

- Provide quality customer service and support;
- Support citizen and business access to County services;
- Ensure a reliable information system environment; and
- Enhance and expand technology.

**County  
Administrator's  
Recommended  
Board Motion:**

Recommendation of Adoption of the Plan as presented.

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# HANOVER COUNTY, VIRGINIA INFORMATION TECHNOLOGY STRATEGIC PLAN 2014-2019



**Dedicated Technology Experts in The Business Of Helping People**



**Adopted May 2014**



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## Who and What We Are In 2014

### OVERVIEW

The 34 employees of Hanover County's Information Technology Department (ITD) support approximately 1000 full time and 400 part time employees. Though primarily an internal service provider, the department also provides direct support to citizens and businesses through various web services and data provided by the Geographical Information System (GIS) program. The department is structured into Applications and Infrastructure support divisions. The Applications team helps implement new systems and manages, supports and maintains existing systems. The Application team includes the service desk group responsible for managing customer service

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requests. The Infrastructure team helps implement new server, network, data storage and computer resources in addition to required upgrades and maintenance. Infrastructure includes desktop support, responsible for managing customer computer requests for assistance. While the School Board has their own IT staff resources, the two departments partner in many areas and this plan will identify other potential areas of future team work and collaboration.

### STRATEGIC PLANNING

The IT Strategic Plan defines goals, objectives, and strategies. The Plan is intended to support the expansion, enhancement, and delivery of technology and services for Hanover County citizens, businesses, and employees, and provides the foundation for how IT will lead information technology innovation over the next 5 years. In 2011 the County adopted an IT Strategic Plan for 2011-2014. That Plan was drafted during the economic downturn and focused on providing value through strong working relationships and knowledge of customer business operations. With limited funding the Plan promoted projects that improved processes, services, collaboration, efficiency and cost savings. Starting with that that foundation, this plan is built on the values to serve, listen, learn, teach, innovate, and excel, and promotes the basic imperative that IT should be in the business of helping people through the use of the latest technology.



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## TECHNOLOGY ENVIRONMENT

### COUNTY

For Hanover's main business systems the County utilizes vendor-supplied software packages for its business applications. These systems were implemented fifteen or more years ago and have served the County well. Although some departments use an enterprise digital document management system, the County still relies heavily on paper to conduct its business. The County has implemented applications and appliances that support enterprise level systems such as email, wireless access, data storage, and system backups.

Most County employees are issued computers based on their work requirements. An assessment was performed that documented employee job requirements and then categorized their computer needs with mobile workers assigned laptops. Highly mobile employees are able to access the County network anytime, anywhere using remote access technology.

### INFORMATION TECHNOLOGY

Hanover has been heavily invested in the IBM iSeries platform (formerly the IBM AS/400) and it has served the County well. Many of the County's major business applications run on this aging platform. This platform has served its useful life at Hanover County and migration to a Windows based platform is an important goal for infrastructure. The Board of Supervisors, County Administration, and IT have embarked on a five year plan to replace or upgrade the County's legacy systems to a Windows platform.



IT has developed security regulations and policies and has implemented a security training program to help keep users current on computer use best practices and regulatory requirements.

### SCHOOL PARTNERSHIP

County and School IT programs partner in the management of internet network services. In May 2013 the County's Internal Auditor examined the potential for increased collaboration between the County and School IT Departments. The study determined that the County and School system could benefit from increased collaboration and identified a number of areas where additional collaboration is possible. Areas include: increased coordination of server virtualization; consolidation of data storage and management; expanded use of shared enterprise applications such as e-mail and enterprise document management; combined disaster recovery and business continuity efforts; and expanded support options for both the County and the Schools.



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## APPLICATIONS

IT manages a portfolio of approximately 135 business applications, ranging from department-specific solutions (68) to enterprise-wide applications (67). The County also has a significant investment in Microsoft products.

Hanover does not custom build business applications, but instead uses vendor-supplied software solutions and internet-based services and all systems are kept under maintenance and support agreements. IT works closely with all its vendors to ensure systems are kept current and fully supported.



The County's Geographic Information Systems The GIS team manages applications in support of County Departments and the public. GIS has a hosted internet website that provides citizens and businesses access to GIS and County business data. They use the current version of the ESRI software, which is the industry standard for GIS applications.

## INFRASTRUCTURE

The County maintains a data center with dedicated redundant cooling and backup emergency power. The County's production environment consists of physical servers along with dedicated appliances where appropriate. IT has leveraged virtual technologies as practical and has attained a 78% virtualization rate. Total inventory includes 145 server systems and 32 terabytes of data. IT provides coverage and network access to 65 County locations, supporting and managing over 1700 devices consisting of user computers, printers, and connectivity devices such as routers, switches and wireless access points. Maintenance of this infrastructure is based on a series of criteria that include age, software and system support, and operational factors. The largest portion of funding is designated to maintain server, storage, and network resources, which are programmatically and proactively enhanced and/or replaced based on technology advancements and warranty support.

IT has a robust work anywhere anytime solution in place that allows for workers to be highly mobile and connected at the same time. Remote access to county services such as e-mail is currently utilized by over 25% of the employees and can be accessed from just about any location that has a data presence.





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## How We Do Business

### INFORMATION TECHNOLOGY DEPARTMENT

The IT Department has established a high support and operating level of service for the daily services provided.

IT provides on-call support to key business areas, including public safety agencies on a 24x7x365 basis. These procedures are reviewed annually to ensure they align with County business needs. The County has standardized on the use of Microsoft products and has entered into both an Enterprise License Agreement and a Premier Support Contract to support this direction. Computer upgrades are based on replacement criteria (age, condition, work style/environment) and user needs. IT has established funding for maintenance and warranty support of application/appliance licensing. These items allow the County to continue to maintain a high level of technology excellence.

As technology becomes more advanced the County must adapt to the changes. The County continues to test innovative technologies, such as tablet devices, to evaluate their benefit and how these innovations can be incorporated into the County's information system program.

### LINE OF BUSINESS/GOVERNANCE

The County has established a project governance model to prioritize the technology needs of county departments. Delegates of the four communities of interest (COI), public safety, human services, community development, and enterprise, meet on a regular basis to discuss technology priorities and make recommendations to the IT Steering Committee, which is composed of the County Administrator and Deputy Administrators. The Steering Committee finalizes IT project funding priorities.

About 75% of IT staff time is devoted to daily operational support activities. The remaining 25% of IT staff time is devoted to the implementation of projects. IT leadership also participates in technical tasks and meeting the technical needs of IT customers. Projects rely on business area staff to be a part of the team. The teams look at ways technology can enhance operations and how business processes can be adjusted to increase efficiency. Project priorities are determined by evaluating the potential service enhancement and return on investment of a proposed





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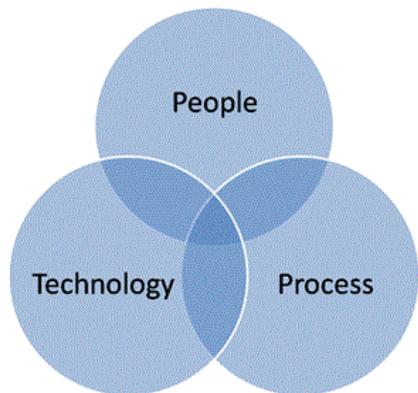
solution. Emphasis is placed on leveraging existing technologies first before looking for alternative solutions.

## Present Challenges

### TECHNOLOGY CHALLENGES

The key to successful strategic planning is aligning your strategic vision to your customer's needs. IT works with our customers to balance new technology, changing business processes, and connecting people to solutions. Technology continues to advance at a rapid pace and can be a strategic asset for improving productivity. As technology evolves the County must be prepared to meet the changing needs of our customers. IT must plan to meet technology challenges in the following areas:

**Major Business Systems** – The Capital Improvements Plan includes funding to upgrade a number of business systems that run on the iSeries platform. Planning and implementation of new systems will require the dedication of both IT and business resources. Several of these systems affect County employees and citizens, so their implementations must be carefully planned.



It is imperative for IT to understand County business operations. The ability to add value to business functions includes a balance between technology enhancements, improvement of end user technical skills, and the need to revamp antiquated business processes. In order for these new systems to be successful IT needs to be a partner with stakeholders to ensure that the systems provide a useful service to citizens and businesses. In an effort to maximize resources and manage the impact of new systems on end users

IT will work with its customers to define roles and responsibilities for solutions that promote a team concept leveraging IT and Departmental subject matter experts.

**Systems of Record** – As new systems are implemented the County should work to establish systems of record where centralized data is stored once and accessed by multiple systems. Data standards should also be implemented to address retention, definition, ownership, and access rules. Departments should be discouraged from implementing solutions that may meet individual business needs, but do not consider the larger environment. Vendors that have enterprise software solutions that allow the County to leverage built-in system integration technology should be considered. However, when that is not possible the County will need to develop and support interface technology. IT should target solutions that support service-oriented architecture and use application program interfaces.



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**Evolution of Technology** – The acceleration of use and constant innovation in smart phones, tablets, and other devices is driving County staff and citizen mobility enabling an “anywhere, anytime” demand for technology related services. The County must be diligent in understanding the technology citizens and businesses use to interact with the County. IT customers must be a part of the solution, and will need to have greater technical skillsets to do their jobs. New communication channels and toolsets and on-line services are changing how we work, socialize, and collaborate. The County must be a leader in developing the tools for citizens and businesses that have embraced social media technology to conduct business with the County through these same avenues. With the cost of supporting data and applications increasing, IT must develop a plan to leverage cloud (internet-based) solutions where appropriate to ensure the effective and efficient delivery of services.



**Network System Capabilities and Security** – The advancement of wireless technology has expanded access to County resources and provided another option for some IT business operations. Our network usage is growing at a rapid pace and the County needs to have a plan in place that accommodates the future access needs of County staff, citizens, and businesses. The solution should include multiple service providers and redundant infrastructure, so there is no single point of potential failure in the network. Security of County systems and data also must be a top priority for the County. The number and frequency of virus and malware programs continues to grow. Many of these invasive programs are passed to County computers from reputable websites. Many of these threats target individuals through websites and emails, so all County employees must be aware of their personal responsibility in this effort and be a part of the security solution.





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## Where We Are Heading & How We Plan To Get There

Hanover County has established a strong information technology environment and has developed a team of dedicated information technology professionals. This Plan seeks to build on this success by identifying strategic goals, objectives, and implementation strategies intended to be accomplished over the next five years. In developing this Plan IT held work sessions to identify the most challenging technology issues that the County will face over the next five years. In addition the Department developed a GAP analysis to identify opportunities to optimize performance and a SWOT analysis to identify strengths, weaknesses, opportunities, and threats to the County’s information systems. These analyses formed the basis for the goals, objectives, and strategies included in this Plan. The goals are as follows:

- Provide quality customer service and support
- Support citizen and business access to County services
- Ensure a reliable information system environment
- Enhance and expand technology

Goals for information technology are driven by working with customers to define their technology needs. The objectives documented for each goal are things that IT would like to attain in support of the goal. The strategies identified are the specific action steps that will be used to achieve the objective. This Plan is intended to meet the imperative that IT should be in the business of helping people by providing a more productive and efficient computer information system environment through the use of technology.



### GOAL I: PROVIDE QUALITY CUSTOMER SERVICE AND SUPPORT

As an internal service provider, the main focus for IT is to provide technology related services to customers. In order to achieve this result IT staff must develop knowledge and understanding of customer business operations to help plan, deliver, and improve services. Partnerships must be created to implement solutions that enhance technology, people, and processes. The proper communication procedures and tools must be developed, promoted, and implemented to foster collaboration. Users must be empowered to leverage all aspects of the technology.

OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
<b>Develop knowledge and understanding of customer business operations to help plan, deliver, and improve services.</b>	Improve processes and procedures to build strong business relationships with County customers, citizens, peers, and the vendor community	On-going; Review one business process annually
	Provide consistent and premier service delivery by establishing high standards and promoting a “customer first” environment	On-going; 90% of customer surveys with high/excellent ratings



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OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
	Participate in business side user groups, workshops, and conferences	On-going; 100 hours participating in events
	Coordinate with local governments, applicable State agencies, and private companies	On-going; Coordinate with colleagues annually
<b>Create partnerships to implement solutions that enhance technology, people, and processes.</b>	Establish technology plans for major business areas	2019; One plan annually
	Define Service Level Agreements with Departments to ensure that all parties understand their responsibilities in supporting applications	2019; Draft SLAs as major business systems are implemented
	Designate IT Contacts in each Department and define their technology support role - support the establishment of technology leaders in larger Departments that have higher IT support needs	2016; Designate IT Contacts
	Establish technology teams for major business systems comprised of subject matter experts from Departments & IT to support software solutions	2017; Establish teams
<b>Improve communication at all levels by developing, promoting, and implementing communications tools that foster collaboration.</b>	Expand SharePoint by upgrading to the latest version and working with Departments on specific applications of the technology	2015; Upgrade SharePoint, implement in one Department annually
	Implement an intranet (internal website)	2018; Develop intranet
	Upgrade and expand Help Desk support software and evaluate Service Manager as a replacement option for coordinating and tracking customer requests	2014; Upgrade software
	Establish communication plans for major business areas to ensure the proper delivery, timeliness, and accuracy of information	2019; One plan annually
<b>Empower users to leverage technology.</b>	Implement self-service software applications and tools providing users access to the functionality and technology of business applications	On-going; Deploy tools to users
	Invest in County staff professional development, education, and training to develop an empowered technology workforce	On-going; Document annual investment
	Develop training plans, programs, and Career Ladder provisions for staff to adapt to changing technical and business requirements	2018; Develop plans
	Establish IT cross-team training opportunities	2014; 3 sessions annually



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## GOAL II: SUPPORT CITIZEN AND BUSINESS ACCESS TO COUNTY SERVICES

Although IT is predominantly an internal service provider, technology has a heavy influence on the way citizens and businesses interact with and take advantage of County services. Technology, and thus IT, plays an important role in providing these services. IT must provide support for new and upgraded systems and mobile technologies to enhance citizen and business interaction with the County. IT must embrace and understand emerging technologies being used to provide and access County services.



OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
<b>Support new and upgraded systems and mobile technologies to enhance citizen and business interaction with the County.</b>	Update main County website to latest technology, including working on mobile devices	2014; Update website
	Update the County GIS website to operate on mobile devices and expand data to meet citizen needs	2015; Update website
	Update business systems and leverage existing systems to enhance citizen engagement with the County in the areas of public safety and on-line services (application and form submission, payments and account management, permits/licenses, and procurement)	2019; One enhancement annually
	Develop interactive web services that provide information to citizens on: public safety; finance; assessment data; human services programs; GIS; County sponsored events and activities; government transparency; and location of government services	2019; One web service enhancement annually
<b>Embrace emerging technologies being used to provide and access County services.</b>	Develop staff resources (internal and external) that have the skill sets to support the latest technology	Ongoing; Document annual investment
	Engage citizen and business leaders to assist in defining the County's technology direction	On-going; Meet with pertinent public annually
	Ensure that public-facing applications are compatible with mobile device operating environments, including iOS, Android, and Windows	On-going; Monitor as technology changes
	Ensure that public-facing applications are accessible using the latest most used browser versions (chrome, internet explorer, Firefox, and safari)	On-going; Monitor as technology changes





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OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
	data sharing and data sharing	
	Establish "systems of record" in implementing new systems to establish a true centralized relational database management system model	2019; Reconcile as new systems are implemented
	Support the integration of systems using interfaces	2019; Develop interfaces
<b>Establish and maintain a secure operating environment to support business operations and to increase the effectiveness of the way work is managed.</b>	Implement programs that enhance service delivery and follow IT standards including: Portfolio Management; Service Catalogue; Dashboards; Service Desk; Disparate password policies; Project Management; and Application Inventory	2019; Implement one service enhancement annually
	Deploy System Center Configuration Manager (manage devices), Operations Manager (alerting and monitoring), and Orchestrator (automating tasks)	2015; Deploy one module annually
	Implement back-up procedures and processes that are timely, efficient, and meet industry standards	2015; Implement program
	Where appropriate implement digital rights management policies to protect sensitive data from unauthorized access or data leakage	2016; Deploy policy
<b>Establish and maintain a secure physical environment to support business operations and to maximize value.</b>	Implement smart-card, camera, lock system technology to manage access to County services	2018; Implement one solution annually
	Develop a plan to implement a Bring Your Own Device (BYOD) program	2017; Draft plan
	Develop realistic disaster recovery and business continuity plans and programs in coordination with Schools	2017; Draft plan
	Implement data center improvements that ensure 24x7x365 operation and mitigate risk from environmental factors	2019; Implement improvements

**GOAL IV: ENHANCE AND EXPAND TECHNOLOGY**

The County continues to invest in technology to support business operations and citizen/business needs. It is imperative that software applications be implemented that meet customer business needs and ensure that the applications are maintained and enhanced over time. To access these services IT must provide a reliable, flexible, and secure communication network infrastructure to conduct County business. IT should focus resources on investments that balance





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implementing new and leveraging existing technology while providing the most value and benefit to the County. This investment should include the establishment of an environment of innovation that values technology research and development.

OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
<b>Implement software applications that meet customer needs and ensure that the applications are maintained and enhanced over time.</b>	Upgrade enterprise business systems in public safety, financial, assessment, human resources/payroll, and community development to enhance functionality and move to the Windows operating platform	2019; Implement systems
	As new systems are implemented establish a programmatic review to identify and prioritize functional enhancements offered by those systems to achieve the greatest return on investment	2016; Develop criteria for system enhancements
	Prioritize implementation of business systems that will automate processes and workflow	2016; Develop criteria for system enhancements
	Determine technology opportunities for coordination with Schools in the areas of server virtualization, data storage, email, and computer support	2015; Identify possible projects
<b>Provide reliable, flexible, and secure communication network infrastructure to conduct County business.</b>	Leverage improvements to private carrier infrastructure to maintain quality network services at all County facilities	2016; Engage providers on industry direction
	Enhance existing Courthouse campus network to maintain a highly available infrastructure between buildings and allow for scalable expansion	2016; Upgrade network
	Improve County internet connectivity by providing internet services via multiple geographic locations	2019; Upgrade network
	Implement a 10gb ethernet expansion over fiber between Human Services building and County Complex via multiple paths	2014; Upgrade network
	Expand wireless services to ensure mobile access in County facilities	2014; Deploy wireless access points
	Draft and implement a plan to continue to expand multiple means for network connectivity to all County buildings, including expanding fiber network and leveraging Motorola radio network	2016; Draft plan
	Establish an information gateway that expands the number and quality of mobile opportunities and allows customers to access, retrieve, compile, and	2014; Develop network access solution



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OBJECTIVE	STRATEGIES	TIME FRAME/ TARGET MEASURE
	share information in a secure environment	
	Develop a security program that includes intrusion prevention, penetration testing, and employee training to help facilitate data security	2015; Draft program
<b>Focus resources on investments that balance implementing new and leveraging existing technology while providing the most value and benefit to the County.</b>	Ensure resources are available to provide the necessary services to IT customers on a daily basis and in the completion of projects	2014; Draft a resource plan
	Define IT services and assess if they can be done more effectively/economically using private sector	2015; Draft services assessment
	When implementing systems evaluate the appropriateness of using hosted or SaaS solutions	On-going; Monitor with project implementations
	Leverage enterprise applications (SharePoint, LaserFiche, Exchange, Office, Website, GIS) to enhance Departmental efficiency	On-going; Document technology advancements
	Replace older hardware components (blackberry, terminal servers, network stations, CRT monitors) with latest technology	2015; Replace components
	Maintain current and accurate GIS data by: 1) establishing standards for data; 2) leveraging web services to interface with business systems and data; 3) ensuring geographically referenced business data is integrated to GIS; 4) developing additional GIS data layers and expand GIS geoprocessing, analysis	2019; Draft processes and document successes annually
<b>Establish an environment of innovation that values technology research and development.</b>	Create a working environment that embraces change and business process improvements	On-going; Document successes annually
	Develop a culture that allows for the consideration and implementation of innovative ideas	On-going; Document successes annually
	Evaluate tablet technology to determine if the devices offer opportunities to replace the standard desktop/laptop computers	2014; Draft feasibility report
	Determine the opportunities for utilizing cloud-based technology (software/infrastructure) for applications, data storage, backups, and disaster recovery	2015; Draft feasibility report

## Conclusion

IT provides a core service to County staff, citizens, and businesses. Demand for these technology services is high both from county employees and the public. The existing technology services provided add great value to County operations. This Strategic Plan identifies a roadmap to build on this success and achieve even greater heights. Capitalizing on this value potential requires teamwork, investment, and a skilled and engaged workforce. IT is a key area of



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investment that can help achieve the County's Mission and Vision for the future. The Hanover County Board of Supervisors, Administration, and the IT Department are committed to solving the technology challenges that lie ahead over the next five years.