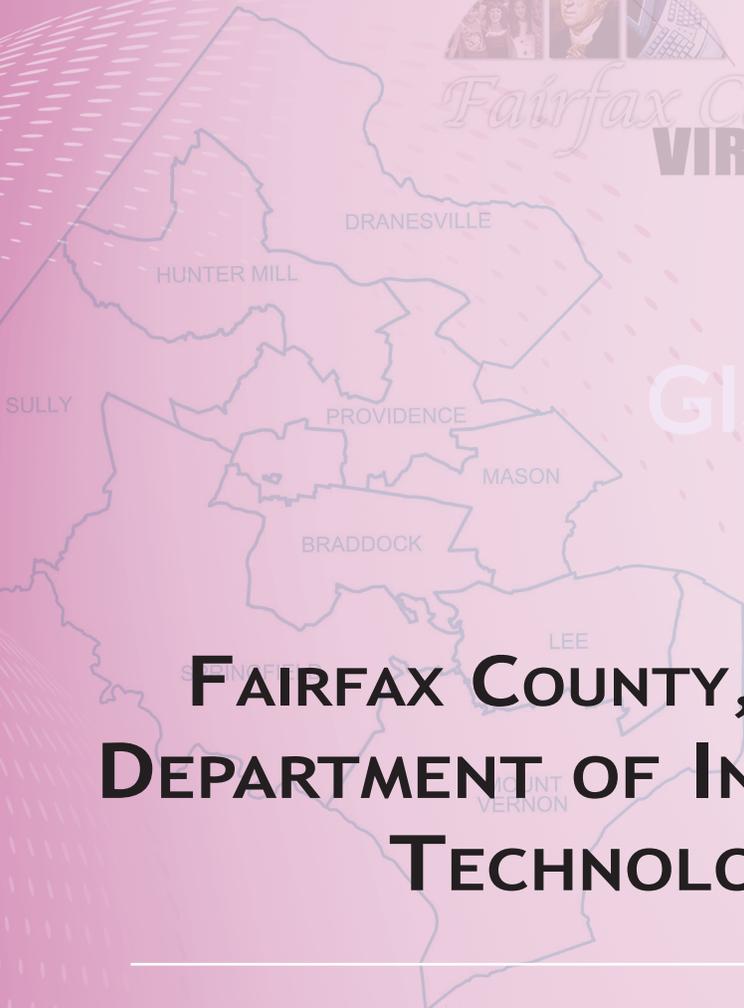




Fairfax County
VIRGINIA



GIS

**FAIRFAX COUNTY, VIRGINIA
DEPARTMENT OF INFORMATION
TECHNOLOGY**

**ADVERTISED FY 2016
INFORMATION
TECHNOLOGY PLAN**





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Fairfax County
VIRGINIA

**FAIRFAX COUNTY, VIRGINIA
DEPARTMENT OF INFORMATION
TECHNOLOGY**

**ADVERTISED FY 2016
INFORMATION
TECHNOLOGY PLAN**

(This document is in effect from 2/13/15 to 6/30/2015)



Fairfax County
VIRGINIA

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Fairfax County
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SECTION 1

IT GOVERNANCE

IT GOVERNANCE

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SECTION 1

IT GOVERNANCE

Plan Overview

Like many governments faced with growth in demand for services while confronting a strained economy, the county continues to mount significant challenges and new opportunities where technology innovation is essential. These challenges and opportunities are fueled by expectations from the county's highly digital constituents and business community to interact and conduct business with the county utilizing contemporary technology and web-based capabilities that enhance information, communication, and transactions in a variety of formats, and enable transparency, access, engagement and open government. An environment of rapid change and the need for responsiveness together with finite resources highlights the importance of thoughtfully considered deployment of IT trends, that embrace supportable standards and agile IT enabled services, solid investment strategy and governance.

The county's Information Technology (IT) capabilities must be contemporary, flexible, scalable, secure, and environmentally conscious with the ability to respond to new goals, dynamically changing service and operational requirements by various agencies and the public. The county's IT environment builds on an enterprise architecture that includes industry standards, open systems, the web, cyber security, and tools that support a variety of needs and diverse portfolio of internal and external systems including 'cloud' offerings as appropriate. The supporting infrastructure foundation is designed to ensure the integrity of transactions, data and optimum system performance. Strategic planning, governance and program management assures inclusion in decision making and implementation of relevant products, and effective solution delivery at a fully leveraged cost.

To enable Fairfax County's technology program to meet these challenges, continued emphasis is placed on determining solutions that provide enhanced web-based on-line capabilities, promote cross agency business processes, enable data mining and sharing for more effective decision making, promote greater transparency, customer service and community engagement by making information more publicly accessible. The strategy also enables key priorities such as on-line digital government, transparency, mobile apps, county worker mobility and

telework, shared devices, green and environmentally sustainable technologies, reporting and data analytics as well as on-going productivity and reliability improvements such as customer self-service opportunities, cyber security and privacy, and maintaining a supportable and resilient infrastructure. Fluid Investments in technology innovation enable these strategies as well as executive leadership goals and county agencies' strategic plans. Emphasis is also placed on governance and processes to ensure that IT projects are managed consistently through proper levels of oversight and tracking, and ensure that IT investments are leveraged, deliver a return on the investment and are aligned with the county's strategic goals.

This County IT Plan is focused on principles, investments and strategies, and is organized in five sections:

- IT Governance: (Section 1)
- Strategic Directions and Initiatives (Section 2)
- Information Technology Projects (Section 3)
- Management Controls and Processes (Section 4)
- Information Technology Architecture (Section 5)

The plan describes funded technology projects through the annual Adopted Budget that accomplish identified goals and objectives of sponsoring agencies; provides status of ongoing projects and accomplishments; identifies resources required for implementation; and states return on investment benefits projected by the sponsors of the projects. Projects are linked to agency sponsor strategy, outreach and operational improvement plans, technology goals established by IT executive management, and/or the Board of Supervisors' goals, initiatives and the County's Vision Elements.

The projects in this plan are primarily funded in the Information Technology Fund - Fund 100-C10040 (formerly Fund 104), and Fund 400-C40091 (formerly Fund 120) (E911). Sometimes projects included in the IT Plan are funded from other sources such as sponsor agency budgets or income funds or other monies to take advantage of total available county dollars to augment investment funding capacity, and provide additional opportunities to meet innovation goals (note that initiatives funded by grants are not included in the plan).

Governance, architecture, and infrastructure supporting IT projects and services are described within this plan. However, ongoing Department of Information Technology (DIT) operating and personnel costs which are funded in the General Fund – Fund 100-C10001 (formerly Fund 001) and the Technology Infrastructure Fund – Fund 600-C60030 (formerly Fund 505), the routine operational activities, on-

going support efforts, normal upgrades and maintenance work supported by these funds and grants are not reflected in this plan. Together, the four core funds support the comprehensive Information Technology delivery for nearly all agencies, lines of business and services. Additional details of each fund can be found in the Fairfax County Fiscal Year 2016 Advertised Budget Plan.

Information Technology Goals

In recognition of the need to link the County's Information Technology efforts to its business goals County executive leadership established county-wide Information Technology (IT) goals and guiding principles that assist in determining priorities for investment based on government service demands and other factors to include resource availability and opportunities. The IT goals are reviewed periodically for applicability and relevance against new demands on county services, IT industry trends and fiscal year dynamics. Based on global changes in social and economic paradigm shifts, the following priorities have been validated and

remain relevant as a basis for funding:

- Mandated Requirements
- Leveraging of Prior Investments
- Enhancing County Security
- Improving Service Quality and Efficiency
- Ensuring a Current and Supportable Technology Infrastructure

1. Technology Organization and Governance

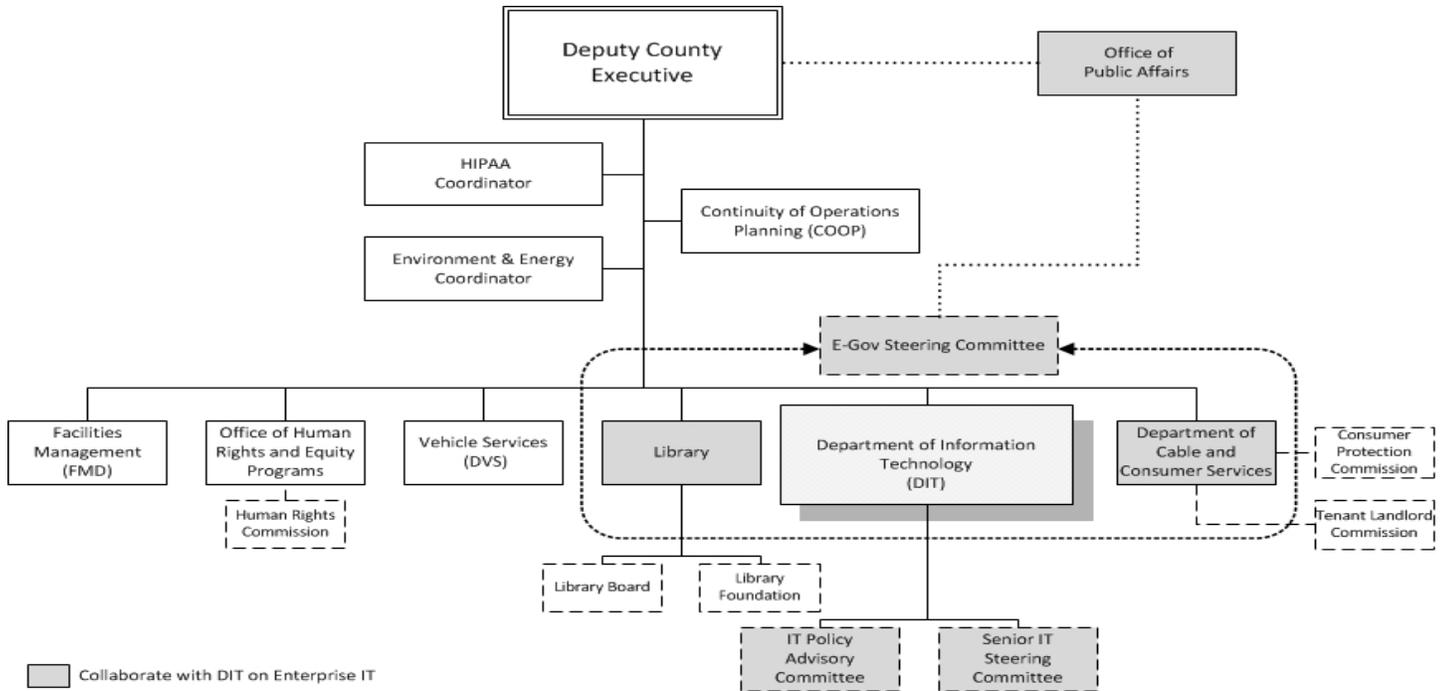
Technology is managed as a centralized enterprise capability in Fairfax County. The Department of Information Technology (DIT) provides the full range of technology services on an enterprise-wide infrastructure, architecture framework and standards for most systems. County agencies may have a limited number of IT staff that may directly support certain agency business specific 'point' solutions or industrial systems (although many of these are beginning to be incorporated on the enterprise network requiring DIT support), and/or provide localized first response desk-side user support. Agencies' IT staff matrix to DIT for standards, direction and assistance in implementing their agency specific business systems, data strategies and integrations. The county's Chief Technology Officer is the Director of the county's Department of Information Technology.

Executive Structure

The chief executive for Fairfax County government is the County Executive (CEX). The CEX has four deputy County Executives and staff who assist with the management of the 50 plus departments/agencies. The Department of Information Technology (DIT) reports to one of the four Deputy County Executives (DCE) who has responsibility for a set of departments and staff functions that either directly

or indirectly participate in the overall direction of innovation and enterprise information policy, as well of other county-wide operational support agencies. The DCE directs a broad range of agencies' functions, programs, and county-wide initiatives, leading efforts that integrate with or enhance the mission of delivering strategic technology initiatives and open government. The DCE may also serve as executive sponsor for enterprise-wide initiatives that cut across multiple agencies and external partners, and coordinates with the other three DCEs on their initiatives. This model groups the county's information and technology programs and related services under a single authority to provide interagency coordination for efficient and effective IT enabled services.

Collaboration among the core related DCE departments which include Department of Information Technology (DIT), Fairfax County Library/ Archives (FCPL), Department of Cable and Consumer Services (DCCS), the Health Insurance Portability and Accountability Act (HIPAA) Coordinator, County-wide COOP Coordinator, Environmental and Energy programs Coordinator, and the Office of Public Affairs (OPA) deliver programs that contribute to the county's innovation in e-Gov and public access channels and capabilities, enterprise technology architecture, document management, green IT initiatives, data privacy, interoperability and county-



wide communications strategy. The information and web content function in the Office of Public Affairs, and Cable Production division in DCCS works closely with the DCE and DIT to develop a comprehensive communications policy, digital capabilities and message strategy including social and new web media. The DCE is also the Executive Sponsor for the Fairfax County and Schools Unified ERP System (FOCUS), working closely with the county's Chief Financial Officer (CFO) in leveraging this important capability. The DCE group also includes the Department of Facilities Management (FMD) and the Department of Vehicle Services. Progressively more FMD utilities are integrated on the enterprise network for improved management efficiency; FMD also ensures that various county IT facilities have the necessary power, cooling, and other structural requirements for optimal IT operations. The Department of Vehicle Services serves the needs of all county agencies by providing for effective delivery of vehicle fleet management services.

The DCE's broad responsibility for information spans policy, information content strategy, energy and conservation, books, visual and print media, television, enterprise technology architecture, management of documents, and compliance. The core agencies are highlighted below.

In working with the Department of Information Technology (DIT), the **Department of Cable and Consumer Services** has several major areas that fit within the overall provisioning of information services county-wide:

Communications Policy and Regulation encourages competition and innovation in county-wide deployment of cable provider services; enforces cable communications legislation and franchise agreements; works with the telecommunications industry to enable the development of cost effective network services for the public and ensures a reliable means of mass communication of official information during public safety emergencies. This group works with DIT on a variety of initiatives and FCC regulatory activities that impact telecommunications services and broadband initiatives for County government that are managed by DIT, which includes the County's private fiber network - Institutional Network (I-Net), and community wireless and broadband initiatives.

Communications Productions provides award-winning broadcast production content for Fairfax County Government Channel 16, the public information channel, and the Fairfax County Training Network (FCTN). Channel 16 televises over 340 live programs that are also available by video stream, reaching an estimated 600,000 residents with information programming about county programs and services that serve the community. The division also operates an emergency messaging system for residents, and is also part of the e-Government channels that work with DIT in web-based video access. Communications Productions also manages the county's audio-visual conference rooms in the government center, coordinating with DIT in integration with the county's network and security teams.

The mission of **Fairfax County Public Library** system is to provide and encourage the use of library resources and services to best meet the evolving educational, recreational, and informational needs of all the Fairfax County and Fairfax City residents. The Library's Technology Vision augments traditional library services with technologies that provide Fairfax County and City residents' access to electronic information resources locally, nationally and throughout the world. Library staff keeps pace with the rapidly changing environment and uses new technologies to assist patrons and improve service delivery. FCPL's goal is to remain flexible by maximizing opportunities to improve service delivery through technology and enhance individual and community life for City and County residents. Working with DIT, FCPL provides Public Access facilities in libraries where the public can access the Internet through wired workstations and wireless services. The Library's goals for technology are:

- Provide County/City residents access to FCPL resources without constraints of time or location.
- Provide County/City residents access to worldwide electronic information sources expand access to local information through electronic means.
- Preserve and provide access to Fairfax County and Fairfax City historical documents and images.
- Ensure delivery of electronic library services to physically challenged residents.

- Manage FCPL resources to efficiently deliver library services.

The DCE also oversees the **Health Insurance Portability and Accountability Act (HIPAA)** coordinator who works directly with DIT's Information Security Office to ensure that an appropriate IT security architecture, standards and enforcement mechanism are in place to protect HIPAA and other privacy laws for covered systems and data; the **Office of Human Rights and Equity Programs** which assists with IT strategy in relation to ADA compliance and related regulatory consultations; and the County's **Continuity of Operations Planning (COOP)** Coordinator. IT strategy and support are also important in other DCE initiatives such as special needs, and Environment and Energy Efficiency and Conservation. The DCE supervises the county's Environmental Coordinator who assists with coordination and review of the county's environmental policies to ensure alignment of goals and objectives with the Board's environmental agenda, and chairs the Energy Efficiency and Conservation Coordinating Committee which was established in 2009 to advance the county's fiscal, social, and environmental stewardship goals. The committee looks for opportunities and coordinates energy efficiency and conservation planning across county agencies, disseminates information and assists with energy related initiatives as requested by the Board of Supervisors or the County Executive.

1.1 Department of Information Technology Organization

The **Department of Information Technology (DIT)** provides leadership, governance, architecture, technical resources and expertise in developing and deploying modern information technologies to improve government efficiency, effectiveness and promotes innovation. DIT is charged with establishing technology architecture, implementing and managing systems, applications, communications, and the overall management and security of the county's information assets. DIT is further charged as the steward of county information systems and data, and agencies are responsible to adhere to IT policy and standards and coordinate their requirements with DIT.

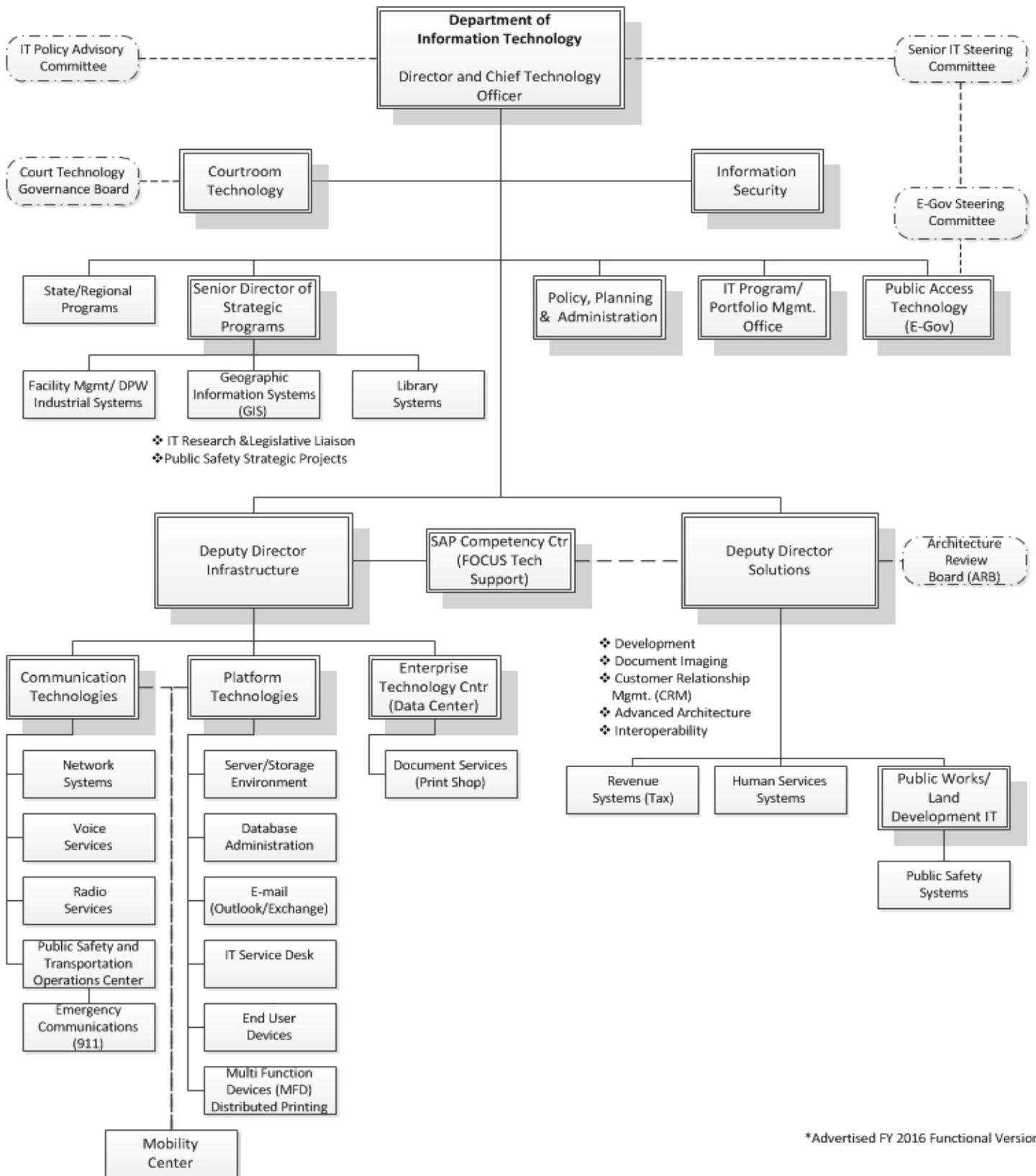
DIT's goals are designed to promote innovation, support county services and energize overall technology investments' performance, and support DIT's work in developing and maintaining information technology systems, and providing secure, agile and sustainable technology infrastructure and customer service support to county agencies. DIT's IT infrastructure and portfolio includes

consideration of 'cloud' and other hosted capabilities that make sense for Fairfax County based on the architecture, and cost and risk implications.

The organizational structure of DIT has evolved over the years to align with changing priorities, trends, requirements, and leverage technology platforms and resources. It is designed to address the ongoing evolution of technology and its utilization in support of the business functions within county government. This evolution has seen a tremendous growth in web based capabilities such as Social and Digital Media, 'cloud' architectures, green IT, mobile apps, and wireless 'smart' devices, as well as platforms that support cross agencies and enterprise class solutions and software applications (see Section 4).

DIT is organized into IT discipline subject matter expert groups (Application Solutions) that support enterprise-wide systems including messaging applications (e.g. e-mail, calendaring and productivity suite applications),

Department of Information Technology Functional Organizational Chart



*Advertised FY 2016 Functional Version

technical support for ERP system management, the document management platform, CRM platform, WEB and geographical information systems used by all agencies as well as certain agency business specific applications development and support. These include applications that support county agencies' business systems including revenue systems (Tax), human/social and health services agencies; land development, public works, and zoning; public safety/criminal justice, and general county agencies including the libraries, parks and facilities maintenance. DIT also provides a multi-channel Public Access/ e-Gov program which provides architectural direction, standards and strategies for on-line applications and technology programs including web, IVR, Social Media and systems and information interoperability architecture. The e-Gov team works closely with County agencies and the Office of Public Affairs in overall management and execution of web-content and social media.

A specialized Courtroom Technology group coordinates the implementation and support of modern courtroom technologies for the three Fairfax County Courts (Circuit, General District, and Juvenile and Domestic Relations), and serves as the liaison with the State Supreme Court for technical solution and data interoperability. The Courtroom Technology director also facilitates management of these Courts' IT staff who support the independent applications and case management systems of the Courts, operating in a virtual matrix management model. The Public Safety group manages programs and new initiatives that integrate systems in public safety, law enforcement, and emergency management also addressing homeland security, and regional collaborative and interoperability initiatives and mandates.

The Technology Infrastructure divisions in DIT (Platform Technology Division and Communications Technology Division) manage server and storage hardware environments, middleware integration tools, communications and network platforms, enterprise messaging applications, desktops and end-user devices, the network based digital multi-function printing devices (MFD) that support county-wide distributed printing, print-on-demand, electronic transfer of printed information, and the IT Service Desk. In FY 2011, the county's Print Shop function was transferred to DIT from DCCS. The strategic integration of print shop functions with the county's print fleet and data center output programs have resulted in greater county wide printing efficiency and cost reductions in the related programs, and provides for other services such as scanning for document capture in the future.

The Information Security Office (ISO) reports directly to the Chief Technology Officer, and has authority in monitoring, investigating, and compliance activities to ensure county IT assets are safeguarded. Enforcement and compliance authority for ISO is through the County Executive.

Finally, the Policy, Planning and Administration group and the Program Management Office provides DIT with administrative and IT policy support functions as well as compliance oversight, and IT technology portfolio/project management.

Strategic Goals and Guiding Principles

The Department of Information Technology is charged with delivering quality and innovative information technology solutions that provide citizens, the business community and county staff solid technical capabilities that ensure the integrity of the county's information, service efficiency and convenient access to appropriate information and services. DIT embraces the following goals:

- Goal 1:** Deliver timely and effective response to customer requirements through teamwork.
- Goal 2:** Provide vision, leadership, and a framework for evaluating emerging technologies and implementing proven information technology solutions.
- Goal 3:** Provide citizens, the business community and county staff with convenient access to appropriate information and services through technology.
- Goal 4:** Work with county agencies to improve business operations by thoroughly understanding business needs and by planning, implementing and managing the best information technology solutions available.
- Goal 5:** Guarantee a reliable communication and computer infrastructure foundation on which to efficiently conduct county business operations today and in the future.
- Goal 6:** Effectively communicate information about plans, projects, and achievements to county staff and customers.
- Goal 7:** Develop and maintain technically skilled staff competent in current and emerging information technology and a user community that understands and can employ modern technologies to maximize business benefits.
- Goal 8:** Ensure effective technical and fiscal management of the department's operations, resources, technology projects and contracts.

In addition to the Department of Information Technology's Mission and Goals, Fairfax County Information Technology projects and processes are guided by **Ten Fundamental Principles** adopted by the Board of Supervisors in 1996, reviewed and updated annually as needed:

1. Our ultimate goal is to provide citizens, the business community, and county employees with timely, convenient access to appropriate information and services through the use of technology.
2. Business needs drive information technology solutions. Strategic partnerships will be established between the stakeholders and county so that the benefits of IT are leveraged to maximize the productivity of county employees and improve customer services.
3. Evaluate business processes for redesign opportunities before automating them. Use new technologies to make new business methods a reality. Exploit functional commonality across organizational boundaries.
4. Manage Information Technology as an investment.
 - a. Annually allocate funds sufficient to cover depreciation to replace systems and equipment before life-cycle end. Address project and infrastructure requirements through a multi-year planning and funding strategy.
 - b. Manage use of funds at the macro level in a manner that provides for optimal spending across the investment portfolio aligned to actualized project progress.
 - c. Look for cost-effective approaches to improving "legacy systems". Designate systems as "classic" and plan their modernization. This approach will help extend investments and system utility.
 - d. Invest in education and training to ensure the technical staffs in central IT and user agencies understand and can apply current and future technologies.
5. Implement contemporary, but proven, technologies. Fairfax County will stay abreast of emerging trends through an ongoing program of technology evaluation. New technologies will often be introduced through pilot projects where both automation and its business benefits and costs can be evaluated prior to any full-scale adoption.
6. Hardware and software shall adhere to open (vendor-independent) standards and minimize proprietary solutions. This approach will promote flexibility, interoperability, cost effectiveness, and mitigate the risk of dependence on individual vendors.
7. Provide a solid technology infrastructure as the fundamental building block of the county's IT architecture to support reliability, performance and security of the county's information assets. Manage and maintain the enterprise network as an essential communications channel connecting people to information and processes via contemporary server platforms and workstations. It will provide access for both internal and external connectivity; will be flexible, expandable, and maintainable; be fully integrated using open standards and capable of providing for the unimpeded movement of data, graphics, image, video, and voice.
8. Approach IT undertakings as partnership of central management and agencies providing for a combination of centralized and distributed implementation. Combine the responsibility and knowledge of central management, agency staff, as well as outside contract support, within a consistent framework of county IT architecture and standards. Establish strategic cooperative arrangements with public and private enterprises to extend limited resources.
9. Consider the purchase and integration of top quality, commercial-off-the-shelf (COTS) software requiring minimal customization as the first choice to speed the delivery of new business applications (this includes Software as a Service cloud solutions) This may require redesigning some existing work processes to be compatible with beneficial common practice capabilities inherent in many off-the-shelf software packages, while achieving business goals.

In consideration of this, it is recognized that certain county agencies operate under business practices that may make the acquisition of COTS software not feasible. Thus also develop applications using modern, efficient methods and laborsaving tools in a collaborative application development environment following the architectural framework and standards. An information architecture supported by a repository for common information objects (e.g., databases, files, records, methods, application inventories); repeatable processes and infrastructures will be created, shared and reused.
10. Capture data once in order to avoid cost, duplication of effort and potential for error and share the data whenever possible. Establish and use common data and common databases to the fullest extent. A data administration function will be responsible for establishing and enforcing data policy, data sharing and access, data standardization, data quality, identification and consistent use of key corporate identifiers.

Awards

Over the years, Fairfax County Government's IT organization, the Deputy County Executive for information departments, and the Chief Technology Officer/Director of DIT, have earned numerous awards and recognitions, including:

-
- 2000
- E-Gov Award for Outstanding Service Technology – MCOG.
 - Innovations in America (Semi Finalist).
 - E-Gov Pioneer Award – Government Solution Center.
 - Webmaster Honor Top 50 Internet/Intranet site.
-
- 2002
- Governor's Technology Award.
 - Achievement Award, National Association of Counties (NACo).
 - Citizens using GIS in Redistricting – NACo.
 - Finalist County Portal Jurisdiction Population – Best of the Web.
 - Deputy County Executive CIO named top "25 Doers, Dreamers, and Drivers of IT in US Government."
 - Bertelsmann Foundation of Germany – County's e-Gov Program recognized as one of top 4 pace setters in the world.
 - A+ Government Performance Project – Governing Magazine.
-
- 2003
- Achievement Award for Using Technology to Enhance Gov't – NACo.
 - Special Achievements in GIS Award – NACo.
 - Best of the Breed Government Sites.
 - Third Place top 10 Digital Counties.
 - Center for Digital Government Best of the WEB.
 - Deputy County Executive CIO named Computerworld 100 IT Leaders.
 - CIO and CTO named Governing Magazine Public Officials of the Year.
-
- 2005
- First Place Digital County Survey Winner – Center for Digital Gov't & NACo.
 - Second Place County Portal Jurisdiction Population – Best of Web.
 - Enterprise GIS Integration – FOSE Trade Show.
 - 2005 Governor's Award – E-Government Program.
-
- 2006
- Second Place Digital County Survey Winner – Center for Digital Gov't & NACo.
-
- 2007
- Wanda M. Gibson named Most Influential Female CIO – Government Technology Magazine
 - First Place County Portal Jurisdiction Population – Best of Web.
 - Fourth Place Digital County Survey Winner – Center for Digital Gov't and NACo.
 - Computer World – Best Place to Work in IT (one of two governments out of 100 organizations).
-
- 2008
- Third Place Digital County Survey Winner – Center for Digital Gov't and NACo.
 - NACo Award for Information Technology Security Awareness.
 - NACo Award for Information Technology Project Management Training Program.
-

-
- 2009
- NACo Achievement Awards- Courtroom Technology Management System (CTMS).
 - Fairfax County received Virginia Coalition for Open Government's Freedom of Information Award in the government category.
 - Fairfax County's site took first place in the Best of the Web county Web portal category.
 - Digital Counties Survey selected Fairfax County as the fourth place winner in the 500,000 or more population.
-
- 2010
- Wanda M. Gibson, Chief Technology Officer (CTO) was selected as one of the top 25 Doers, Dreamers and Drivers for 2010 by Government Technology Magazine.
 - Achievement Awards from the National Association of Counties – Department of Information Technology (DIT) teams participated in the following programs recognized by NACo:
 - Fairfax County Budget Public Input Process - Management & Budget (DIT e-Gov participation).
 - Electronic Accounts Payable System – Finance (DIT Finance and HR Branch).
 - New CAD System – DIT/Public Safety agencies (DIT-Public Safety Branch, Technology Infrastructure Branch, and Network Services)
 - Commonwealth of Virginia's Innovative Technology Symposium (COVITS) Award for Regional CAD Interoperability; and Virtual Fairfax GIS application.
 - Fairfax County's IT Security Director – was one of a select group of nominees at the state and national level to receive the Cyber 7 Award at the *2010 Federal IT Security Symposium for advancing and promoting IT Security*.
 - Cybertrust Certification Award by Verizon Cybertrust Enterprise Security Management Program.
 - DIT's Director of Courtroom Technology was awarded the Fairfax Bar Association 2010 President's Award for leadership in implementing courtroom technology that has delivered efficiencies in court proceedings.
-
- 2011
- Wanda M. Gibson, CTO, was nominated as a finalist for 2011 prestigious Women in Technology (WIT) Leadership Award sponsored by the Women in Technology Organization.
 - Public Technology Institute (PTI) Web 2.0 State and Local Government Awards for Excellence. The awards recognized innovative use of Web 2.0 applications and social media tools to engage citizens, improve efficiency and increase accountability.
 - Industry Green IT Award recognized Fairfax County for successful IT Infrastructure and power management projects that decreased the county's carbon footprint, achieved enterprise wide IT efficiencies and cost savings.
 - Fairfax County GIS Manager elected to Board of Directors for The Urban and Regional Information Systems Association (URISA), a premier association for GIS professionals to share ideas and solutions for using spatial information technologies to solve government challenges and improve the quality of life in urban and regional environments.
 - Ranked among America's top five in the 2011 Digital Counties Survey, which recognizes leading examples of counties using information communication technology.
 - The Center of Digital Government ranked Fairfax County website as one of the finalist in the Best of Web Awards.
 - Intergraph ICON Award recognized Fairfax County for a multi-agency collaborative effort between the Department of Information Technology and Fairfax County public safety agencies for successful implementation of a new Computer Aided Dispatch (CAD) and related public safety systems as part of the Public Safety Architecture Modernization Project. The project was initiated and enabled through the county's IT Governance model and managed by the county's Department of Information Technology.
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- 2012
- Wanda M. Gibson, CTO, was nominated for 13th Annual Leadership Award, a prestigious award sponsored by the Women in Technology Organization.
 - National Information Exchange Model (NIEM) Award recognized the CAD 2 CAD implementation, a key initiative in Northern Virginia that enabled data sharing and views of critical screens on key resource dispatch status between the disparate Computer Aided Dispatch Systems in Fairfax County, City of Fairfax, City of Alexandria, and Arlington County.
 - Received COVITS Award in the local government category for the e-Gov team's "Placing Government in the Palm of Your Hand."
 - Public Technology Institute (PTI) recognized the significant achievement on Mobile Applications: Government in the Palm of Your Hands.
 - VACo (Virginia Association of Counties) Achievement Awards Program recognized Fairfax County among 11 winners throughout the Commonwealth of Virginia for the 'Court Technology Model: Coordinated County and Courts'.
 - MarkLogic recognized Land Development Services' (LDS) with the MarkLogic Excellence Award for the Big Data Initiative.
 - Government Computer News (GCN) recognized LDS with an Honorable Mention Award at the GCN Awards Gala for the county's Land Use Big Data Initiative.
 - Center for Digital Government (CDG) 1st place winner of the 2012 Digital Counties Survey recognizing leading examples of counties using information and communications technology. Fairfax County earned first place in the IT Leading Initiatives 500,000 or more population category.
 - The Mid-Atlantic Association for Court Management (MAACM) awarded the Court Scheduling System its 2012 John Neufeld Award which recognizes individuals or teams for the development and implementation of significant and unique court management systems in the Mid-Atlantic region.
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- 2013
- The Association for GIS Professionals, URISA's Exemplary Systems in Government (ESIG) recognized the National Capital Region Geospatial Data Exchange (NCRGDX) as a Distinguished System.
 - Received COVITS recognition in the local government category for the Innovative Use of Technology in Local Government FINALIST: Emergency Data Gathering Repository (EDGR); Fairfax County Department of Information Technology.
 - Center for Digital Government (CDG) 3rd place recognition of the 2013 Digital Counties Survey recognizing leading examples of counties using information and communications technology.
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- 2014
- Received National Association of Counties (NACo) Achievement Award for Emergency Damages Assessment Tracking in the category of Information Technology; Fairfax County Department of Information Technology.
 - Received National Association of Counties (NACo) Achievement Award for Next Generation Security Program in the category of Information Technology; Fairfax County Department of Information Technology.
 - IT Security Director was honored as a top finalist in the ISE® North America Executive Award in the Academic/ Public Sector category
 - Center for Digital Government (CDG) 3rd place recognition of the 2014 Digital Counties Survey recognizing leading examples of counties using information and communications technology.
 - Received two COVITS recognitions in the local government category for the IT as an Efficiency Driver G2C (Government to Citizen) for Paying Taxes Using Smartphone, Mobile App and Tax Bill QR Codes and Cross-Boundary Collaboration for the National Capital Region Identity and Access Management Service.

In promoting awareness and innovation in technology in Fairfax County Government, DIT hosts several key events each year including:

- **GIS Day** where DIT conducts competition among county agencies for new application of the use of geospatial and related technology;
- **IT Security Awareness Day**, an annual event designed to bring the latest intelligence in promoting employee awareness and knowledge about risks

and responsibility in using technology at work and at home.

- **Annual Vehicle Command Rally** attended by local, state and Federal organizations to showcase and train on the latest communications and interoperability capabilities that aid in emergency incident coordination and response.

These events have received county and national organization awards and recognition over the years.

POLICY GOVERNANCE

Fairfax County's IT policy governance aligns information technology investments and programs with the county's strategic business goals in order to broaden participation related to the allocation, use and management of the county's IT resources. The senior executive committee and

a citizen advisory committee provide DIT management with oversight and guidance on technology investment strategy. Various steering and governance boards provide strategy and governance focused on specific program areas and major enterprise wide projects.

1.2 Information Technology Policy Advisory Committee

The Board of Supervisors is committed to providing county government with the resources necessary to keep pace with emerging trends in information technology; providing citizens, the business community, and employees' timely and convenient access to information and services through the use of technology; and using current technologies to create new business processes and improve government efficiency. To maintain these commitments, the Board has made substantial, continuing investments in information technology. In 1997 the Board of Supervisors created a private sector citizen group called the Information Technology Policy Advisory Committee (ITPAC) to provide the Board with a source of expert citizen advice regarding information technology strategy; and assist the Chief Technology Officer (CTO) with technology direction advice and validation of applicable industry trends for government. ITPAC serves as advisor to the CTO, providing counsel, experience and support for the county's IT program.

ITPAC meets on a regular schedule to review the county's technology posture, key projects, and the annual technology investment plan. The ITPAC Committee membership includes:

- One representative appointed by each Board Member (10 in total)
- One representative appointed by the School Board; and

- One representative from each of the following groups:
 - Fairfax County Chamber of Commerce
 - Fairfax County Federation of Civic Associations
 - League of Women Voters
 - Northern Virginia Technology Council

The Committee's duties and responsibilities are:

- Stay current with information technology developments, including telecommunications, and provide recommendations to the Board of Supervisors regarding incorporation of technical improvements in the county's information and telecommunications systems.
- Review the annual Information Technology Plan and investment budget and make recommendations to the Board of Supervisors.
- Review major information technology acquisition plan and make recommendations to the Board of Supervisors.
- Present facts and issues that it deems important to the attention of the Board of Supervisors.
- Advise the CTO and DIT on strategic and related issues.

1.3 Senior Information Technology Steering Committee

In FY 1999 a county executive group, the Senior IT Steering Committee, was created to advise the Chief Technology Officer and DIT Leadership, and provide policy governance oversight for the county's IT strategy. The Senior Information Technology (IT) Steering Committee was formed by the County Executive to provide oversight of IT policy and investments to ensure their alignment and support of strategic and operational business requirements. The committee monitors the IT project portfolio to continually assess whether the investments are providing expected benefits. This monitoring process provides a broad perspective on the overall status, mission needs, and priorities for the county in making decisions, the committee reviews and provides budget recommendations for new initiatives. The committee meets on a routine basis to review on-going project status in relationship to the county's strategic business initiatives and policy.

Core members of the Senior IT Steering Committee include:

- The County Executive
- Deputy County Executives
- Chief Financial Officer
- The Director of the Department of information Technology/Chief Technology Officer
- Other County officials may be asked to participate as needed

The Committee may activate a number of sub-committees around specific issues that report their findings back to the Senior IT Steering Committee. As part of the decision making process, the Committee presents and discusses strategic policy issues on behalf of the Senior Management Team which is comprised of all county department heads.

1.4 e-Government Steering Committee

The e-Government Steering Committee is a subcommittee of the Senior IT Steering Committee, and was created to assist the Deputy County Executive for Information Technology with e-Government policy, strategy decisions, and ensure enterprise consistency and standards in regards to the county's e-Government Program. Members of the Committee include:

- Deputy County Executive – Chair
- Chief Technology Officer, Director of DIT
- DIT Deputy Director, Applications & Digital Government
- Director, Office of Public Affairs
- Office of Public Affairs – Communications Integration Director
- Director, Department of Cable and Consumer Services
- Director, Fairfax County Public Libraries
- Chief Information Security Officer
- Deputy County Attorney

The committee:

- Establishes goals and initiatives for on-line digital government

- Develops e-Government/Web policies
- Assists the Deputy County Executive in consideration of department requests for external links, exceptions to policy and the use of emerging e-channels
- Identifies e-Government related issues and ideas
- Sponsors periodic focus groups, surveys and other public or internal outreach to ensure that the e-Government program is meeting the needs of county customers
- Investigates and adopts new e-channels such as social media to ensure that the county's government channels and services meet the needs of the county's external and internal customers
- Initiates pilot projects and conducts after action review of the pilot projects
- Recommends changes as necessary to e-Channels or adopts new e-Channels based on customer feedback
- Sponsors projects for inclusion in the county's annual IT Plan

1.5 Public Safety Information Technology Governance Board

The Public Safety Information Technology Governance Board (PSITGB) provides leadership for an effective public safety information technology strategy that leverages the use of information technologies for the delivery of consistent public service and emergency management services to the citizens of Fairfax County. Members include:

- Deputy County Executive for Public Safety
- Two Deputy County Executives
- Chief Technology Officer/Director of the Department of Information Technology
- Chief of Police
- Chief of Fire and Rescue Services
- Director of Public Safety Communications (9-1-1 Center)
- Director of Emergency Management
- County Sheriff
- General Manager of the Public Safety and Transportation Operations Center (PSTOC)

The PSITGB provides a forum for senior executives, senior management staff from public safety agencies and key IT staff to:

- Formulate and adopt IT policies and priorities that impact major public safety and emergency management initiatives
- Take advantage of opportunities presented by shared operational needs and concerns by deploying solutions that leverage resources and investments
- Communicate public safety IT policies and procedures to public safety personnel and ensure compliance with adopted policies
- Improve efficiencies through reduction and elimination of redundant information technology, service and effort
- Provide an organizational framework to ensure continuous awareness of best practices in public safety technologies and emergency management
- Provide project oversight

1.6 Courtroom Technology Executive Governance Board

The Courtroom Technology Governance Board was established to provide governance and oversight for courtroom and court related technology initiatives. The Executive Board reviews and endorses policies and procedures, and provides oversight and direction. The Board is composed of the Chief Judge or Judge designee of each court, Clerk of Court or Clerk designee of each court, Agency Directors - Juvenile Court Services Director,

and the County's Chief Technology Officer (CTO). The Director of the Courtroom Technology Office is the designated administrator for the board and is responsible for ensuring effective strategic as well as planning, development, and integration of courtroom technology resources and programs with the courts and other agencies and entities.

1.7 Governance Committees for Other IT Initiatives

In carrying out its mission, the CTO, the Deputy County Executives and/or DIT senior directors participate on several key County Committees focused on major county initiatives and/or operational oversight agendas that have significant requirement for IT participation, use or impact, for example:

- Emergency Management Coordinating Committee, and Emergency Management Executive Committee
- Fairfax County United System (FOCUS) Steering Committee

- Land Development Systems Steering Committee
- Human Services Leadership Committee
- Consolidated Volunteer Management System Coordinating Committee
- Audit Steering Committee

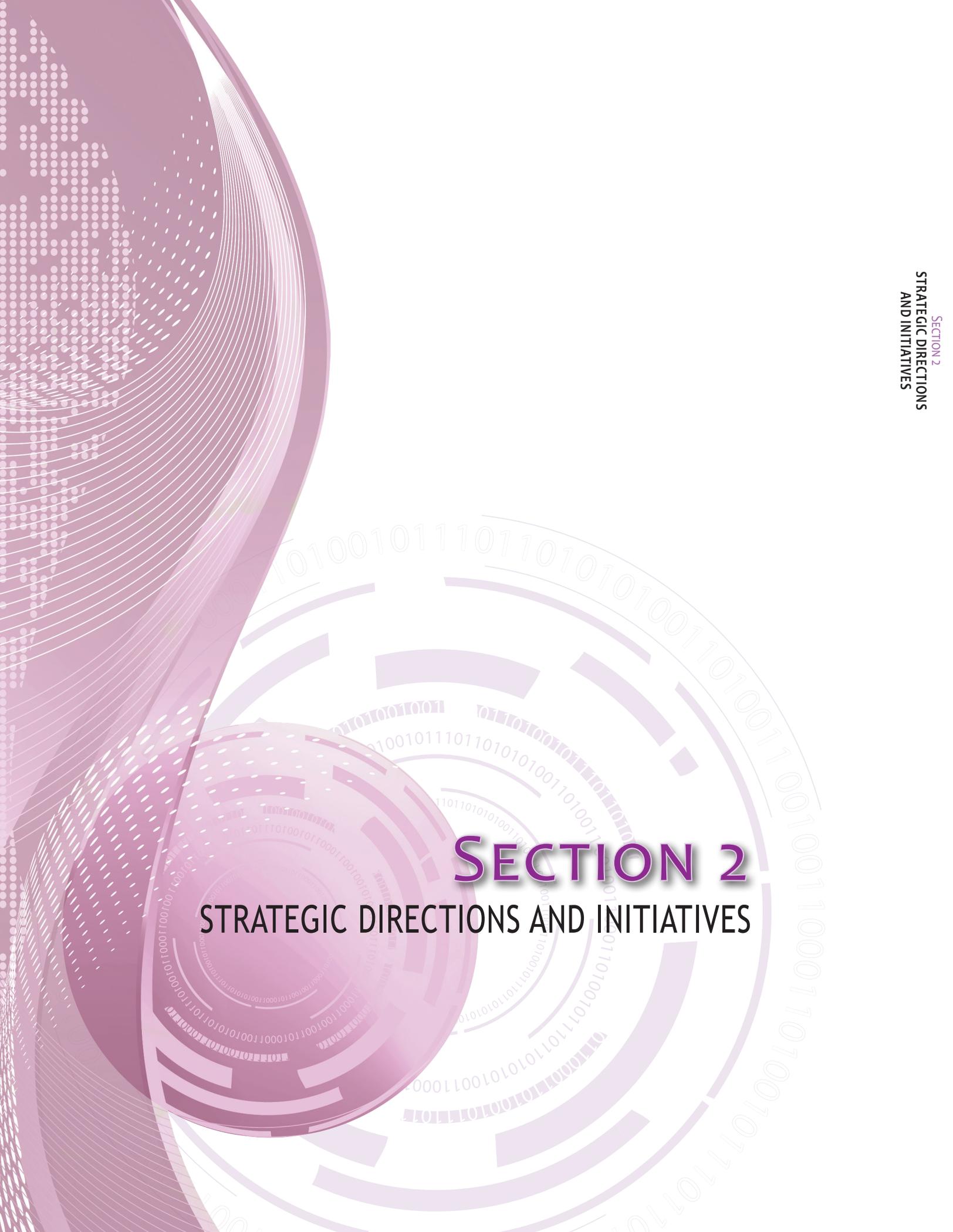
Other committees may be established for innovation that crosses multiple agencies or has enterprise-wide scope or impact.

1.8 Fairfax County's Regional and National Prominence in the IT Community

In addition to internal committee involvement, Fairfax County Government's CTO and IT Management provide leadership and/or participate on several federal, state, and regional committees including:

- Council of Governments CIOs Committee, Chair 2013/2014 - current
- Council of Governments CISSO Committee, Chair 2011- current
- Council of Governments Emergency Preparedness Council
- National Capital Area (NCR) Homeland Security Executive Committee
- Regional Working Group for interoperability (Maryland, Virginia, and DC, state and local functional and technical leadership representation)
- Council of Governments Interoperability Council
- Commonwealth of Virginia Interoperability Council
- Federal CIO Council
- FOSE Board
- National Association of CIOs
- National Association of Telecommunications Officers
- Virginia Local Government Information Technology Executives (VALGITE)
- Metropolitan Information Exchange (MIX)
- SIMS (Society for Information Management)
- Northern Virginia Regional Commission
- NoVA RPAC-I
- National Association of Counties
- Public Technologies Incorporated, 2013 Class Fellows
- Federal IT Security Symposium Advisory Board
- COVITS Board (Commonwealth of Virginia IT Symposium)





SECTION 2

STRATEGIC DIRECTIONS AND INITIATIVES

STRATEGIC DIRECTIONS AND INITIATIVES

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SECTION 2

STRATEGIC DIRECTIONS AND INITIATIVES

The most critical challenge facing organizations today is the imperative to stay current with the rapid pace of change in technology, harnessing innovation that delivers immediate return on investment effectively to realize the organization's strategic goals, optimize service efficiencies, and successfully meet end-user and public expectations in an environment of new fiscal challenges. As a strategic investment of county resources, technology facilitates the delivery of better and faster service and enables the county to effectively respond to growing demand at optimal cost and efficiency, thus critical to ensure investment strategies are in place, balanced and fluid. However, investments in technology can be significant, including capital, initial transformation and incorporation of technology into an organization's business, and sustainment. Without capital expenditures, capabilities can also be enabled through annual operational cost models, such as with technology 'clouds', subscription services, and other infrastructure or software-as-a-service business offerings. However acquired, new

technology must be wisely adopted and carefully integrated into the organization's technology and business architecture for optimal impact.

The Fairfax County technology strategy incorporates a thoughtful plan for investments at optimal time and delivery. This has contributed to the county's ability to keep pace with growing demands for services and promoted agility in facilitating response to evolving new needs and opportunities. Additionally, this strategy has helped the county address new economic realities, provide improved communication, information and open government for public engagement, leverage the overall technology portfolio and capabilities on an enterprise scale that meets the diverse needs of a wide variety of operational needs. The following key initiatives are part of the overall strategy and living portfolio of strategic opportunities and objectives on an enterprise scale designed to optimize effective, efficient and customer-oriented services for internal government and constituent engagement.

2.1 Digital Government/e-Government

The e-Government (e-Gov) initiative is a foundational program supporting the county's goal of a "government without walls, doors, or clocks", consisting of many channels, policies and processes that integrate all platforms, both for internet as well as intranet. The strategy includes initiatives for expanding channels using new media capabilities and improving mobility, and citizen engagement and experience. The comprehensive strategy includes an inclusive set of channels, using enabling technology, policy and processes and the technical foundation for the county's open government and transparency goals, as well as enabling county agencies' operational efficiencies goals and mobile workforce, emergency management and Continuity of Operations Plans (COOP). The e-Gov program develops the architecture for the WEB, other public channels and internal WEB portals, and includes the website www.fairfaxcounty.gov, online services, mobile, social media, web-based applications, Interactive Voice Response (IVR), Cable TV, the county's Public Access

sites in Libraries and Access Fairfax sites, and other tools across all agencies to enable comprehensive and cohesive access to county information and services that span over fifty agencies. In addition to efforts of on-going improvements to enhance the look, feel, navigation, and search capabilities of the Web and deploying new services, transactions, social media and other content, the strategy also includes CRM and Content Management tools for comprehensive, integrated service options.

A governance body, the e-Gov Steering Committee (see Section One) develops strategy and goals for this program. Popularity and use of the e-Gov capabilities continues to expand. Here's a sampling of significant stats as provided in the FY 2016 budget:

	FY 2013	FY 2014	% Change
Website Visits	17,911,663	19,252,748	+6.97%
Searches	3,475,388	2,608,134	-33.25%
Mobile Web Visits	198,210	149,718	-32.39%
Facebook Reach	6,560,341	11,603,306	+43.46%
Emergency Blog	647,577	499,967	-29.52%
YouTube Views	118,350	159,919	+25.99%
SlideShare Views	965,798	1,029,807	+6.22%
TOTALS	29,877,327	33,303,599	+15.37%

The county has achieved much success and acclaim for its e-government focus in integrating the WEB and IVR platforms that offer a wide variety of channels for complete online public access capabilities to services and programs, and incorporation of social media capabilities in a thoughtful way that enhances service needs. Fairfax County and the city of Alexandria shared the Virginia Coalition for Open Government's Freedom of Information Award in the government category. Fairfax County was recognized for its efforts to engage the public as a regular part of the budget development process which includes extensive outreach through the use of social media platforms which received national recognition by Public Technology Incorporated (PTI). In over ten years, Fairfax County continued to be ranked in the top ten localities nationally, and received national recognition from the Center for Digital Government in the top 3 among its size in the nationwide 2013 Digital Counties Survey competition.



Over twenty-five county agencies have deployed a variety of Social and New Media apps to support their constituent programs and services. In FY 2016 and FY 2017, the county will continue to add new online services, enhance county mobile apps, integrate with social media even more, redesign and work on re-engineering information presentation on the public website. The e-Gov program will also continue to work with the Commonwealth of Virginia, regional partner municipalities, and federal government agencies in interoperability of common service portals and developing web service standards to enable cooperative access and seamless integration of information and services regardless of the origin or the source.

Website

The current family of homepages on the county's primary website at www.fairfaxcounty.gov uses responsive design to render seamless information across three device types: desktop, tablet and mobile. Design considerations included highlights the key services the public is looking for online along of a pictorial representation of the county activities which was based on analysis of years of captured metrics. The most accessed services are featured prominently and easily available on the top in the "Find, Pay, Report" section of the homepage, based on the current website usage and metrics. Periodically a comprehensive review is conducted of the Website for redesign potential to update the look, navigation and over-all usability of the 34,000 page site with new functionality, content enhancements, and innovative features. The Website and CRM solutions are part of the county's overall service improvement and customer engagement enhancement initiatives and support the goals of cross-agencies' services integration and improvements projects such as in land development and social services.

As metrics show, more than half of the traffic to www.fairfaxcounty.gov comes from search, so e-Gov will continue to invest in this important aspect, both for the county's search appliance and to optimize web content so commercial search engines find county content. A highlighted news section provides easy access to information categorized by topics and brings into focus county functions, departments and agencies, county-wide initiatives and featured services. The Google Search Appliance augmented the overall search functionality of the website. The design won national recognition for being 'Best of the WEB' by the Center for Digital Communities. In addition to the benefits for on-line services efficiency, the public website is also a part of the county's "Going Green Initiatives". The county website is also being translated into multiple languages using machine translation powered by Google Translate. For website accessibility, website pages are tested for compliance with Section 508 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) by passing through the county's automated compliance checking tool. The e-Gov team's Web Content Review program began in early 2014 to take a fresh, systematic look at significant agency pages on the public website.

While initial e-Gov efforts were largely focused on providing access to services, Fairfax County is expanding its efforts to provide citizens the necessary tools for engagement, interaction and participation with county government in order to improve communication and services

(Citizen-to-Government Networking) and greater transparency. The county's website has been one of several channels used for public input into the county's budget planning process. Fairfax County's "Online Services" is a centralized location for access to over fifty online and interactive services offered to the public to complete routine transactions such as payments, applications, and reporting with ease. In FY 2014, the county augmented its online services portfolio with number key services like online Courtroom Reservation, enhancements to Building Permits application, and Financial Transparency – a joint initiative with Fairfax County Public Schools which provides transparency to the public for both county government and public schools on their respective websites as well as on all mobile devices to view budget & expenditure data and specific vendor payments thereby promoting open disclosure.

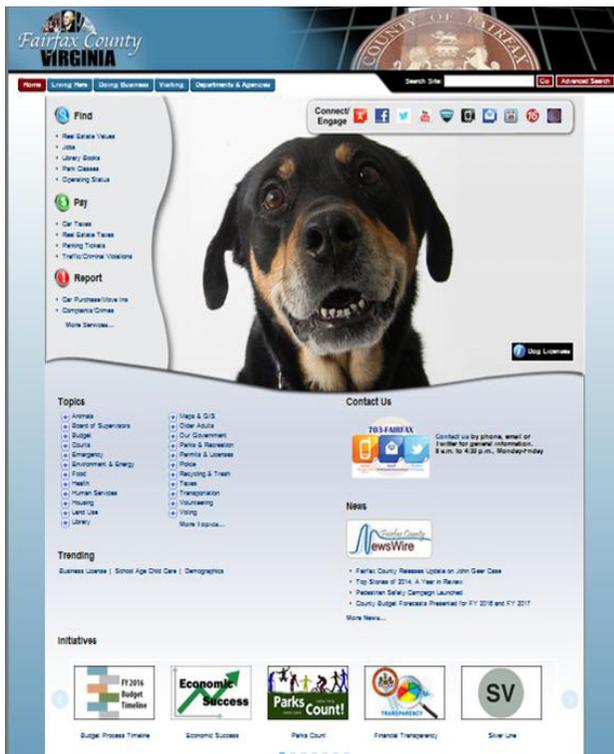
In FY 2016 and FY 2017, e-Gov will continue to affirm the county's strategic vision and goals, with continual enhancement of services and focus on improving online service delivery along with coordinated process for implementation and to keep in alignment with the Customer Service and Engagement efforts. Focused efforts on re-architecting information, modifying layout and presentation of content on the county website will continue to be of prominence. Emphasis will be placed on providing information based on topics key to

the public, which will be based on metrics and usage patterns of the website. Staff intends to update and refresh county apps with the latest features of software developer kits and county content.

Mobile

Acknowledging the widespread growth of mobile technology which added convenience of using mobile devices from anywhere at any time, a mobile version of the county website was launched. In FY 2012, Fairfax County increased the value of its e-Government efforts with the add-on of mobile apps for all platforms like iPhone/iPad, Android and Blackberry for free downloads. Providing mobile accessibility from various devices further enhances citizens' convenience and reaches a wider user community with the ability to access services and information in the palm of their hands. The county expanded offerings in mobile access by making the county's public website accessible via wireless devices www.fairfaxcounty.gov/mobile which enabled citizens to interact with county government through personal wireless devices. Samples of the mobile apps deployed include:

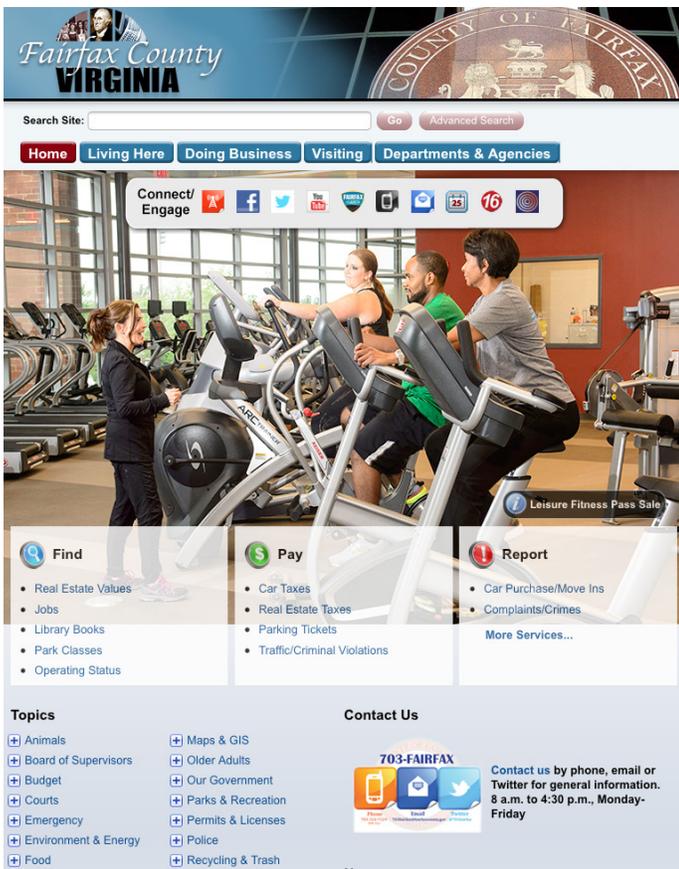
- **Alerts** - Offers the latest updates about major incidents or weather events including text/e-mail alerts, social media, emergency RSS news feed, important phone numbers, seasonal preparedness information, recovery resources, mobile weather forecast, and links to Key County, state and federal emergency agencies.
- **NewsWire** - Each business day, the Fairfax County NewsWire features the latest headlines from county departments.
- **Contact Us** - One-touch calling of our main 703-FAIRFAX phone number, critical emergency phone numbers, libraries, parks, courts and by department/program.
- **Calendars** - Browse upcoming public meetings, community events, tax deadlines and more.
- **Library** - Patrons can browse the online catalog, get hours, locations, check reviews, place holds for pick up, modify hold requests, check account status, and renew material. Additionally, the library also has a native iPhone application.
- **Locations** - Use the GPS features of your device to find the nearest library, park, community center, fire station, police station and government buildings.



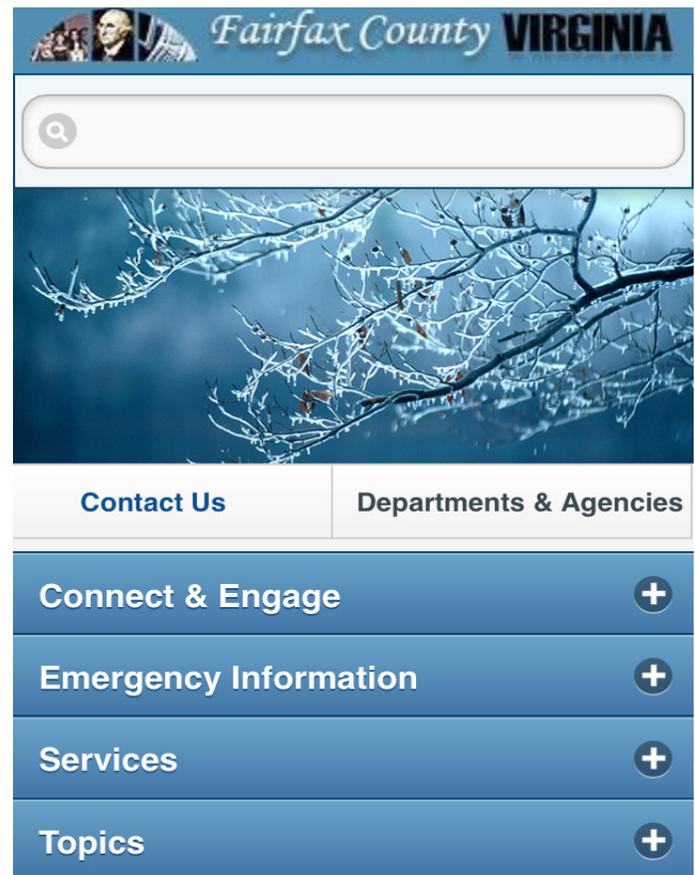
- **Services** - Key services like **Childcare Central** and **FIDO** (building permits, applications and complaints) applications. Additional service related applications are in development.
- **Social Media** - Links to the mobile versions of all official county government social media sites on Facebook, Twitter, YouTube, Flickr and podcasts on iTunes. Like us, follow us, watch a video, view pictures or listen to podcasts on iTunes through our coordinated social media efforts.
- **Elected Officials** - Quick access to the ten member Board of Supervisors with links to mobile versions of Board offices' web pages, meeting schedules, agendas and more.
- **Transportation** - Key links to major transportation resources such as the Connector bus, Metro, VRE, bikes, pedestrians, Virginia Department of Transportation and more.
- **VOTE** - Check voting places for the Office of the Registrar to include on-going enhancements.

- **Car-Tax** - Allows tax payments via e-checks, credit and debit transactions.
- **Tax Evaders** - Allows residents to report vehicles that may not be compliant with tax regulations.

The county's suite of mobile apps, "Government in the Palm of Your Hands", was showcased at the Metropolitan Washington Council of Governments (MWCOG), and won awards from the Commonwealth of Virginia IT Symposium (COVITS), from Public Technologies Inc., and was also recognized by the Center for Digital Government-Digital Counties Survey. Information about the county's Mobile Apps can be accessed on the county's website: <http://www.fairfaxcounty.gov/news/mobile/>. The Fairfax County Mobile App has been downloaded about 19,430 times since its launch.



Fairfax County main page tablet view



Fairfax County main page iPhone view

News



(<http://www.fairfaxcounty.gov/news/>) is the county's one-stop news shop, which focuses on the delivery of news and information to the public: residents, businesses and other interested groups. NewsWire is a comprehensive tool, that consolidates all the ways residents and employees can stay connected with the County, including: the social networking sites, information available on 703-FAIRFAX, News to Use, E-Government services, podcasts, RSS feeds, Weekly Agenda and emergency alerts. NewsWire is published on the website, as an e-mail newsletter, and on Twitter.

Ask Fairfax is an online discussion forum that has hosted hundreds of questions through the years for dozens of chat topics with county experts. This has proved to be an invaluable tool for engaging the community.

Social Media

Social media in Fairfax County has been a significant success to engage and provide services. The county currently has 15 Facebook Pages, which reached 11.6 million people in FY 2014, a 43.46 percent increase from FY 2013. The number of county Twitter followers has doubled in the last 15 months across 10 county accounts. The use of these tools is critical to providing two-way information with the county community. A centralized social media content management system is in place, along with a comprehensive social media policy that can be found at:

www.fairfaxcounty.gov/opa/fairfax-county-social-media-policy.pdf.

The social media management system's user interface takes the form of a dashboard, and supports social network integrations for various social networks like Facebook, Twitter, You Tube etc. This system has helped build an engaging presence on social media with the ability to manage all our social networks and schedule messages for future publishing. Additionally, the real time analytics provided by this tool gives an in-depth view on the dashboard of how well the county's social media efforts are being received by the public with the ability to visualize the metrics in one easy place. The tool also helps monitor social media conversations that matter to the county, identify its influencers and observe emerging trends.

In coming fiscal years, the use of social media beyond communications will be important. The e-Gov plan will further integrate social media into operational aspects of agency lines of business to ensure cross-platform sharing

as needed. Social media tools will continue to evolve as the leading e-Gov tools of choice in the years to come.

Audio

In FY 2014, Fairfax County launched a new Internet streaming radio station simply named Fairfax County Government Radio. It is hoped that one day the county will fulfill the complete audio vision of public information by fully utilizing the 1670 AM radio spectrum. The county currently owns and produces even more audio content for the county's SoundCloud social media account. The public can listen online (<http://www.fairfaxcounty.gov/radio/>) as well as on mobile devices, meaning access 24 hours a day, seven days a week.

During emergencies, the station will be used to share important emergency information in an audio format, the same way the county currently uses other platforms such as the emergency alert system (<https://www.fairfaxcounty.gov/cean/>) where residents can sign up to receive emergency alerts by both text and e-mail.

Video

The use of videos has continued to expand beyond the county's existing cable TV channel. Fairfax County YouTube channel views grew by 25.99% in FY 2014 and videos for the intranet have led to greater engagement among employees.



Customers Served

VR:	5 million since FY 2005
Web:	34,000 pages – 14,968,148 visitors which equates to 59,001,252 page views
Unique visits:	13,322,116 i.e. user access multiple pages or conduct business
E-services:	125

Information and Services Available	
Adult education classes	Web
Becoming a child-care provider	Web
Board Meeting minutes (searchable)	Web
Budget information and approved budget	Web
Bus tour schedule	Web
Child-care provider list	Web
Collection of household trash & recyclables	IVR
County Code – full text	Web
County demographics	Web
County maps, scrollable, printable	Web
Courts – Circuit, General District, and Juvenile	Web, IVR
Crime statistics, Wanted List, Neighborhood Watch	Web
DTA EPay	Web
iCARE DTA Real Estate Assessment and Information Query	Web
Library Picture Books	Web
Public Meeting Calendar	Web
Fire & Rescue Media Information	IVR
Health Information	Web, IVR
Inspection scheduling status	IVR
Information for victims of crime	IVR
Job opportunities	Web
Library information line	IVR
Multi-jurisdictional information	Web
My Neighborhood	Web
Newcomer information	Web, IVR
Parks/Recreation information	Web, IVR
Public safety information	Web, IVR
Real estate property assessment & tax information	Web, IVR
Seniors information and programs	Web, IVR
Frequently Asked Questions	Web
RSS Feeds	Web
Podcasting	Web

Doing Business with the County	
Access Health Department food inspections database	Web
Access GIS aerial photography with pan and zoom	Web
Apply for County jobs	Web
Apply for a library card	Web
Board of Supervisors compliant forms	Web
Building Permit Fees Estimate	Web
Download request for proposal/invitation for bid	Web
Electronic Mailing List	Web
Estimate Electrical Permit Fee	Web
File complaints about landlord or consumer problems	Web
Find location of closest Library by entering zip code	Web
Register & pay for Park Authority classes, camps, & tours	Web, IVR
Library Audio Books	Web
Obtain permit/plan status	Web, IVR
Pay taxes with credit card	Web
Pay taxes via eCheck	Web
Pay traffic tickets with credit card	IVR
Query current real estate property & tax information	Web, IVR
Query Human Services online "Resource Guide"	Web
Query for current position on the Housing Waiting List	IVR
Query specific court case information	IVR
Query status of an inspection, permit, or plan	Web, IVR
Query Victim Services data for offender release date info	IVR
Register a vehicle	Web
Request faxes of court fees and procedures	IVR
Reserve a golf tee time	Web
Reserve/renew Library books – search catalogue	Web
Reserve a picnic area	Web
Report change of address for tax purposes	Web
Report a lost pet	Web
Report a zoning or noise ordinance violation	Web, IVR
Search for information in historical newspaper	Web
Search for County agency telephone numbers by keyword	IVR
Special Needs Registry	Web
Sheriff Service Civil Process	Web
Subscribe to County publications	Web
Social Needs Registry	Web
Volunteer to help in the Library or Parks	Web
Zoning and Noise ordinance compliant form	Web
Athletic Facilities Application Request (AFAR)	Web

2.2 Geographic Information Systems (GIS)

GIS is a strategic foundational technology, integrated with numerous county applications and business processes. It is an essential component of county operations and is heavily used by a wide range of county agencies (some of those activities are highlighted at the end).

The GIS office maintains a range of technologies, related products and data that provide the foundation for ongoing integration of GIS into county operations as well as enabling new developments.

Web-based GIS applications have become more pervasive over the past several years, with 2014 seeing a noticeable jump in utilization on the county's web site as well as in field operations. One example is the election results viewer. The application, released for the November 2014 elections was heavily used election night and enabled Fairfax to display ongoing vote tallies through the evening. A new "My Neighborhood" report was also released, using newer technology and a refreshed interface.

As more county agencies switch from Blackberry to iOS devices, deployment of field data collection applications becomes much easier to do than before.

The Park Authority and the Fire and Rescue department are using mobile applications to collect information on invasive species, trail erosion, and fire hydrant location. Other agencies, such as Public Health and the Police Department are considering using mobile data collection in some of their business processes.

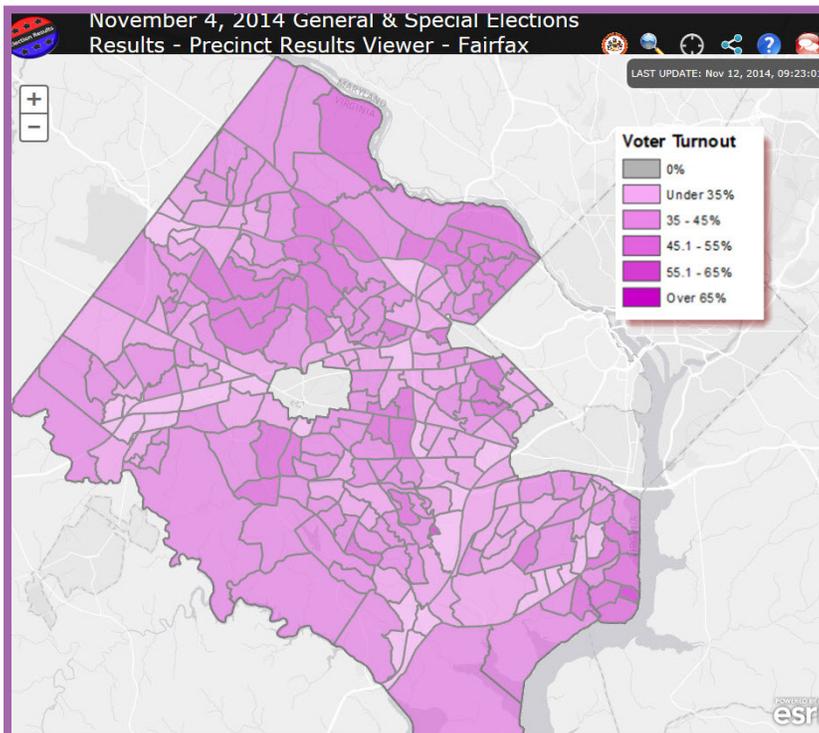
The GIS Office released a GeoPortal page on the county web-site that is a single location to access the growing number of GIS enabled web-applications available for use. As of February 2015, twenty-six applications are available to constituents.

3-D viewing implemented in 2010 continues to be popular and is scheduled for a software update along with 3-D building refresh and expansion to cover 57sq.km. of buildings, Virtual Fairfax provides users the ability to easily navigate the county and view buildings in the key Tysons Corner and Reston/Herndon areas in 3-D.

Modifications have been made to the underlying application (<http://www.fairfaxcounty.gov/gis/virtualfairfax/>) that will enable other county agencies to develop co-branded applications (e.g., Virtual Fairfax – Tysons) to let them customize the content for their business needs. If

these versions are implemented, they will retain the ability for users to access to different land information systems (LDSNET, iCARE, and My Neighborhood), and provide easy linkage to information for schools, historic sites and places of interest. GIS has been working with other agencies who have expressed interest in having a co-branded site, and there are currently no firm plans to implement a co-branded site. Additionally, due to the intense development in Tysons Corner and the Reston area, GIS will pursue updating of the 3-D buildings and base imagery of those areas using the 2013 Pictometry imagery as the source. Additional areas with 3-D buildings will be added as well.

Oblique imagery and its related software is another core technology for GIS and the county. Originally implemented in 2003 with GIS support, it has become a key tool for multiple county agencies. Oblique imagery is integrated into CAD/911 operations as well as the Department of Tax Administration with many others. It also serves as the source of the data used



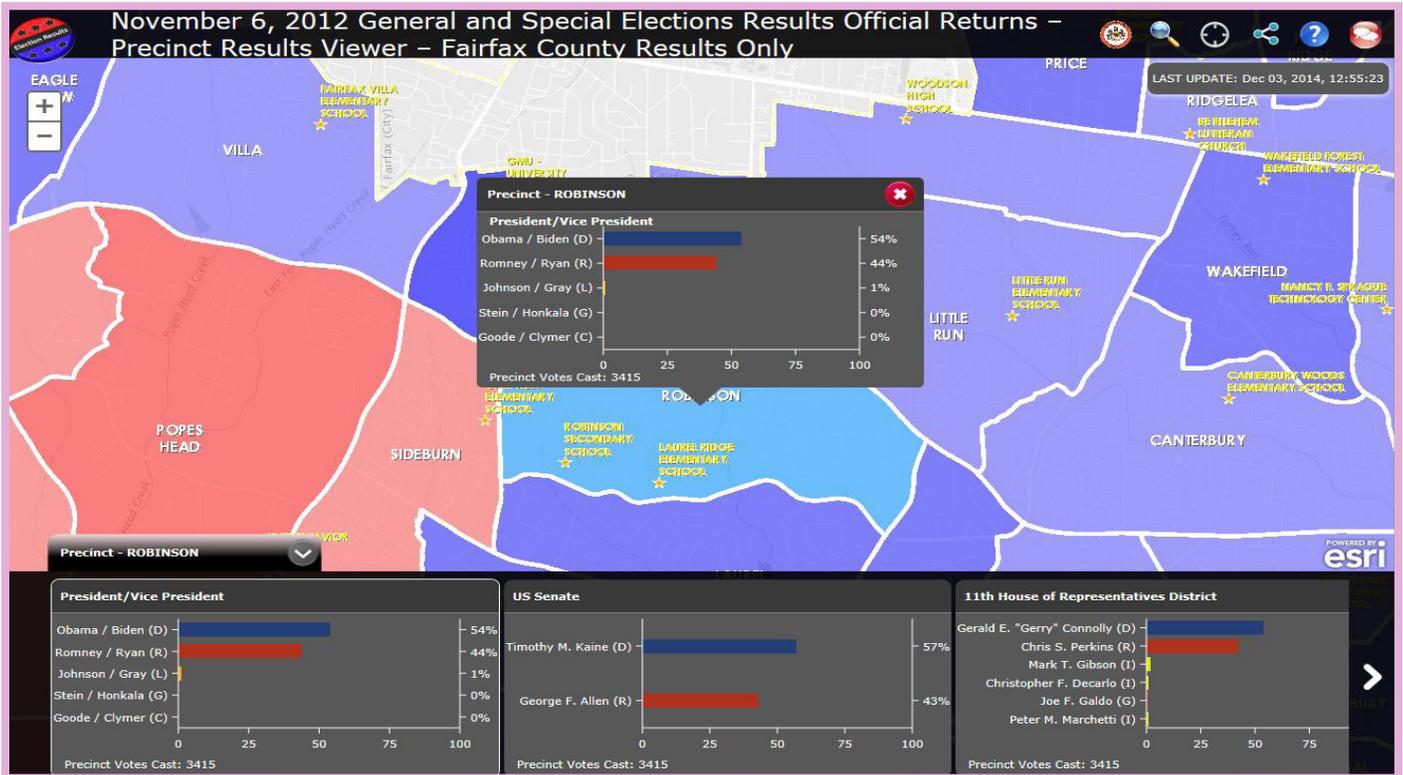
Pricinct Viewer - Shows voter turnout by precinct across county

to construct the 3-D buildings in Virtual Fairfax. The oblique imagery contract was successfully re-competed. As a result the county will continue to obtain oblique imagery and 3-D objects through Pictometry. The next acquisition under the new contract will be for the 2015 oblique imagery. Below is also an example of oblique imagery of the Reston town center. Note the view of the side of the buildings.

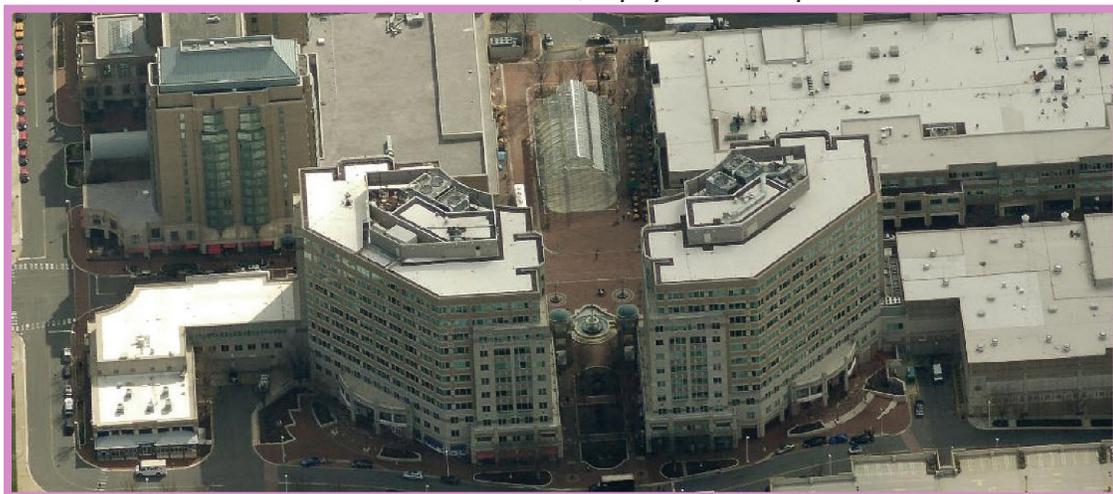
applications as well as implement enhanced web-viewing tools to replace some of the older desktop viewing tools that can be cumbersome to use. It will also pursue development of more advanced GIS-enabled web applications to provide more powerful tools to the public.

GIS will obtain the necessary software tools to enable integration of oblique imagery into county web

Planimetric data is another foundational data set for almost all county applications including Police and Fire and Rescue vehicles, various desktop applications,



Precinct viewer: Presidential race, Display of Robinson precinct



Oblique image of Reston Town Center.

and various county mobile applications. The planimetric data update was jointly funded and completed through a partnership with the Department of Public Works and Environmental Services. The work was jointly funded and completed. The work significantly expanded the planimetric features in the GIS data warehouse: over 13 million new planimetric features were added to the GIS planimetric data – an increase of over 400%. GIS is now working with DPWES to determine the optimum refresh cycle and funding approaches.

Below is an example of planimetric data (outlines of built features), for part of the Reston Town Center.

Accurate planimetric data depends on having high resolution and high accuracy ortho imagery. The county partners with the state every four years to purchase new ortho imagery for the county. The partnership significantly lowers the cost to the county of the imagery. That imagery is used on the web and as a foundation for all of the GIS data layers since they can be easily overlaid on the imagery as well as be derived from the imagery. 2017 will be the next acquisition year, based on the four year refresh cycle. The next page shows an example of orthoimagery of the Reston Hospital area. Note the straight down view.

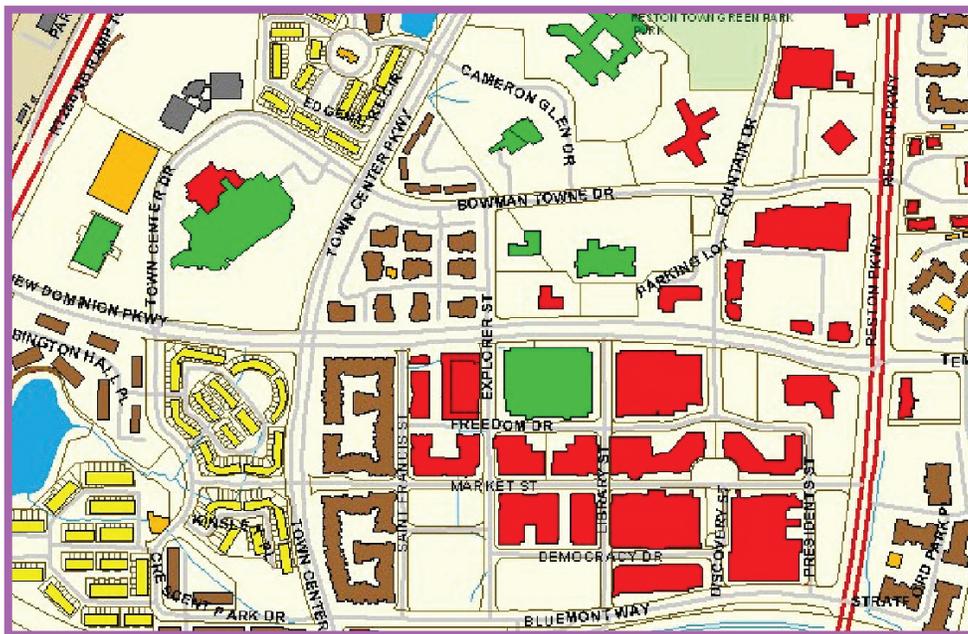
Addresses are essential to almost all county operations. The GIS office collaborated with other county agencies to bring the Master Address Repository online in 2004.

GIS maintains much of the data in the system on a daily basis. The Master Address Repository (MAR) project has proved to be invaluable for the CAD/911 system as well as other key county systems such as FIDO, LDS and iCARE. The MAR is the authoritative source of parcel (sites) addresses in the county essential for effective operation of the new CAD/911 system.

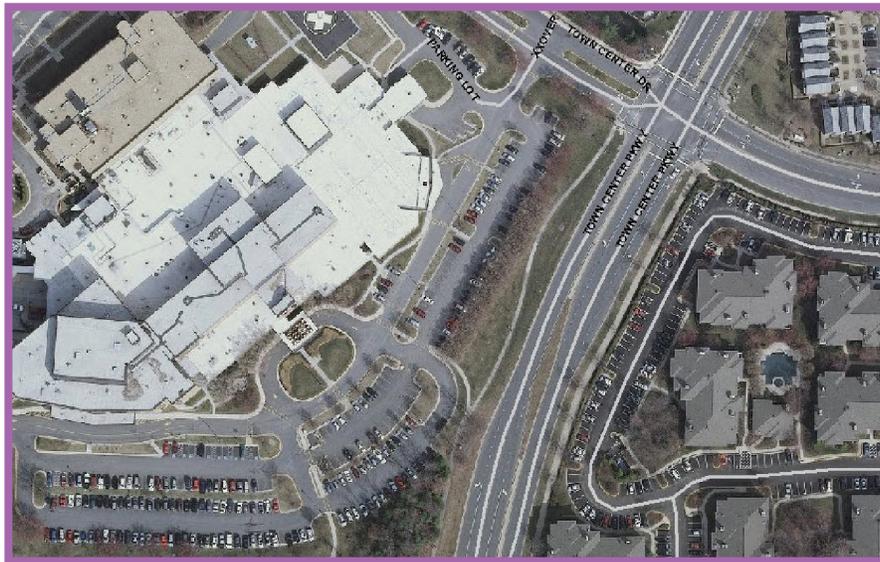
Interoperability is a significant and ongoing strategic activity for GIS, both within Northern Virginia and regionally through the Washington Council of Governments (COG). Interoperability across National Capital Region (COG) and with the Federal government for emergency response purposes is also crucial. Fairfax is a member of the COG GIS Executive committee and has helped guide the development and implementation of the National Capital Region Geospatial Data Exchange through its membership in the projects executive committee. The project went live in spring 2012 and a revision of the software was released in August 2014. The system integrates with the federally funded Virtual USA network and provides a convenient tool to enable fast exchange of geospatial data to registered users of the system.



It was a valuable asset for interagency collaboration for the presidential inauguration in January 2013 – enabling sharing of much more spatial data among federal and local agencies than was possible in the 2008 elections. NCRGDGX will also be used in the upcoming



Planimetric Data for Reston Town Center. Buildings colored by zoning.



Ortho image of Reston Hospital area.

World Police and Fire Games, scheduled for June 26 through July 5, 2015 which will be held across the region, though mostly in Fairfax County. Plans are underway in Northern Virginia and the Washington Council of Governments to include regional data sharing (via NCRGDX) as part of emergency training and drills.

Interoperability is crucial in Northern Virginia as emergency response regularly crosses jurisdictional boundaries. Access to accurate street centerline data is particularly important to the Fire and Rescue personnel who may have to cross jurisdictional boundary lines when responding to an incident. Since Fairfax County's GIS office maintains the street centerline data used in the CAD/911 system, it is working to obtain similar data for the region. The Regional Routable Centerline project has been an important and ongoing project for the CAD/911 system. Programming work on the software necessary to enable the Centerline Project concluded in 2012, testing and review continued well into 2013. The Regional Routable Centerline project was funded by a grant from the State's Wireless 911 Board. The project will enable Fairfax County and neighboring jurisdictions to share up-to-date centerline data for their CAD systems, and enable member jurisdictions (Loudoun, Prince William and Arlington counties and the cities of Alexandria and Fairfax) to share routable centerline data with Fairfax County. Additionally, the state supports this effort in order to gradually build a statewide routable centerline data set. This initiative not only benefits CAD/911 implementations state-wide, but other business processes that need routable data.

Significant progress has been made with regional centerline data. Tests in January 2014 indicated that the participating jurisdictions had revised and corrected their data for regional use. Tests in production will occur in early 2015. This project was awarded a Significant Achievement in GIS (SAG) award by ESRI in 2011. The SAG awards recognize organizations that have used GIS to improve the world, and set new precedents throughout the GIS community.

GIS support for the CAD/911 system is a core GIS office responsibility, involving data maintenance requirements which continue to be a significant effort. Maintenance of the CAD GIS data is carried out daily.

The county's GEM application will be completely revised and re-implemented in a new software platform late in 2015.

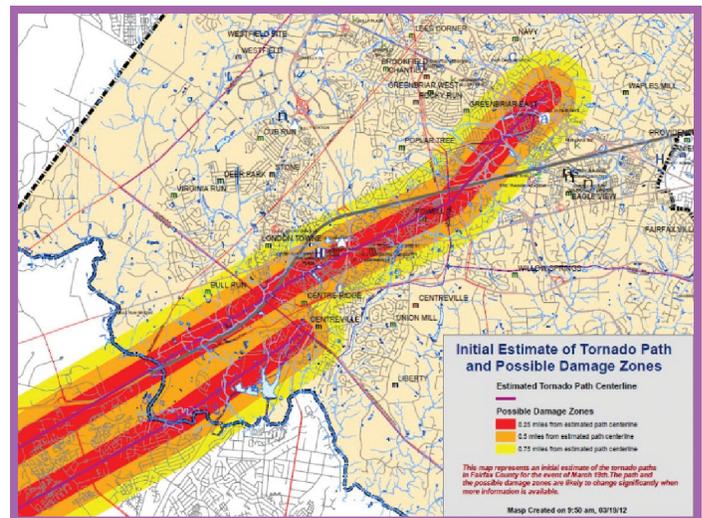
The Digital Map Viewer (<http://www.fairfaxcounty.gov/gisapps/pdfViewer/default.htm>), a heavily used application, was completely rewritten and was released in 2012.

Over the past years there have been a number of examples of the importance of GIS technology to county operations. GIS participated in the Derecho, Hurricane Sandy and the Inauguration – each one requiring extensive GIS support. One of the better examples of what a large scale county emergency response would involve was an exercise called Operation Enduring Collaboration.

The three day exercise was held from March 19-21, 2012 and was based on the scenario of an F-3 tornado

striking the Sully/Springfield area of the county. The intent was to practice a total county response to such a major disaster. In planning for over a year, the exercise involved all county departments that would be involved in a disaster response. GIS played a key role throughout the three day event.

In preparation, GIS staff assisted event planners and produced the map-based exercise control products that would drive the exercise. For instance, a realistic tornado path was created with specific F-level damage zones for use as the ground truth of the scenario (shown below). Using this information, the population of those impacted was estimated and damage assessments were derived. GIS provided some 75% of the information used to run the exercise.



Tornado Path and Damage Analysis

Once the operation began, GIS was tasked with 40+ requests for maps and analyses over the three days. The volume was such that the GIS Branch opened a Departmental Operations Center (DOC) at the GIS office to augment staff and handle the numerous requests. The team's efforts played a large role in helping to guide the decisions that were made by other participants from the operational agencies.

The Director of the Office of Emergency Management (OEM) subsequently noted that "the work between OEM and GIS has quickly become the model in the region and state for WebEOC/GIS collaboration. OEM has

been invited numerous times to demonstrate this product to first responders and EOC staff that are always amazed by the work of the GIS staff."

Fairfax County cost-shared with the US Geological Survey to obtain LIDAR data for the county. Countywide data will be available in 2015 (acquisition has been delayed due to snow coverage of the ground). LIDAR provides immensely detailed elevation data of all features in the county and should be a substantial help in stormwater and urban forestry planning and analysis.

Data Layers	FY 2005	FY 2007	FY 2009	FY 2011	FY 2012	FY 2013	FY 2014
Parcel	341,000	356,000	358,300	358,140	358,630	358,765	359,610
Addresses	360,000	368,000	365,100	365,669	366,295	366,488	367,130
Building outlines	248,000	257,000	257,300	264,361	267,729	274,078	273,960
Miles of roads	4,000	4,700	4,736	4,825 (county) 7,628 (regional)	4,904 (county) 7,652 (regional)	4,943 (county) 7,729 (regional)	4,959 (county) 8,240 (regional)
Number of streetlights		57,939	59,937	60,448	60,557	60,825	61,257
Linear miles of sanitary sewer lines		3,350	3,390	3,410	3,424	3,440	3,455

Table 1 - Some of the significant layers in the GIS database

The volume of GIS information continues to grow in Fairfax County. The GIS data warehouse holds over 800 layers of Fairfax County data and several hundred more of neighboring jurisdictions. The overall size of the vector data stands at over 100 GB (including business data tables), and the raster data is now over 5 TB on line with an additional 4.5 TB currently archived. The LIDAR data is expected to add over 500 GB of data. As a result of new software tools, more imagery and historic maps will be added and made available. The volume of data in the digital map viewer has increased annually as new sets of property and zoning maps were added. Currently there are nearly 45,732 pre-made maps and images of historic maps available online. Table 1 lists the number of features in some of the categories and their change over time.

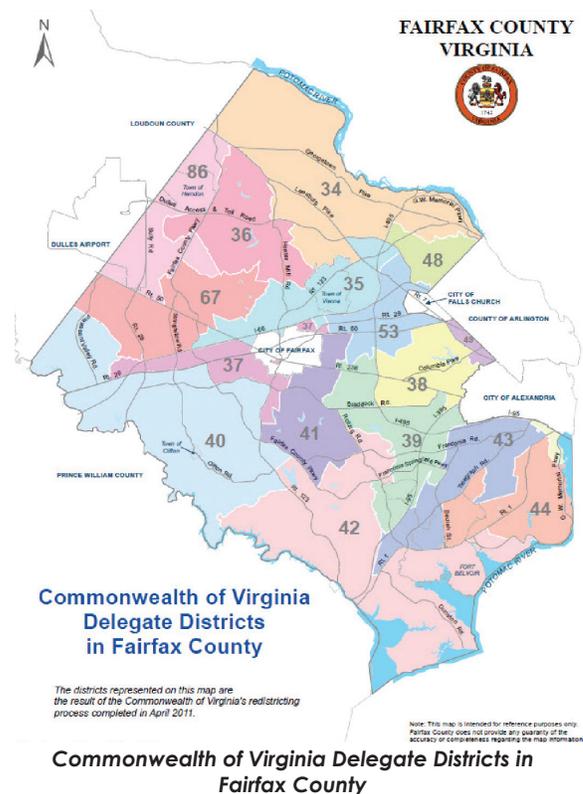
The availability of key county data digitally through the GIS provides a range of benefits to constituents as well as county staff. Digital orthoimagery is widely used within GIS as well as over the web. With the parcel and zoning data now maintained digitally, production of the county's parcel and zoning books has been greatly accelerated. Time consuming manual steps were replaced with a digital production process enabling staff to capture additional features in the GIS (e.g., more easements, particularly conservation easements). All map changes are posted to the internet daily, providing web users of the Digital Map Viewer with the latest versions of the maps. Prior to these enhancements, maps were printed for distribution annually. Digital production has enabled the use of color maps, and development of new symbolization of zoning patterns are added features. The popularity of the frequently updated data is evident by the steady increase in usage of the Digital Map Viewer and reduced demand for the printed books. Currently over 10,000 DMV maps are viewed or downloaded per month on average.

In addition to the GIS branch itself, over 25 county agencies use GIS in their operations. These include:

- **Northern Virginia Soil and Water Conservation District** – The soil maps (both the official 1990 and unofficial 2008) are available with seven other digital map series on the county's web site. The 2008 soil series maps were added to the digital map viewer in FY 2009. The new soil data based on the countywide soil evaluation program conducted jointly with the federal Natural Resource Conservation Services and the Northern Virginia Soil and Water Conservation District was added to the digital map viewer. Sales of the printed property and zoning maps has fallen steadily as more users turn to the free, digital online maps.
- **Public Safety** – The centerline file was modified to reflect Northern Virginia's common centerline elements and made available to county agencies. IT has been substantially enhanced with additional data needed for CAD and for regional routability of emergency response vehicles. That will continue to change as a result of the regional/state centerline grant. Public safety is the heaviest user of oblique imagery (at call taker and dispatch workstations) as well as planimetric features (in over 1,000 emergency response/public safety vehicles).
- **Department of Public Works and Environmental Services (DPWES) – Solid Waste Division** – Substantial savings are realized in the Department of Public Works and Environmental Services through the use of GIS. The agency was recognized by the State of Virginia for integrating GIS with refuse vehicle routing for additional flexibility and cost savings. GIS is currently working with DPWES to revise the refuse truck routing and incorporate new GPS technology to speed operations.
- **DPWES Stormwater Management** – GIS technology enabled the Department of Public Works to complete the mapping involved in the Streams Characterization Project in weeks rather than months. They have been using GIS to help analyze the age of the storm water infrastructure to identify areas where there were lengthy systems that were reaching their service lifetimes and would need replacement or maintenance. Additionally for watershed analyses, some of the analyses time has been cut in half through the use of planimetric data, LIDAR and satellite imagery. The GIS also enables the Storm Water Management Branch to track easements around storm water facilities. It also maintains maps of the stormwater features in the county and makes them available via the Digital Map Viewer.
- **DPWES Waste Water Management** – The Department of Public Works digitized the sanitary sewer lines into the GIS and maintains them regularly. Those maps are available online for viewing and download in the Digital Map viewer.

The Department also uses GIS as part of its automated sanitary sewer permit application tool which greatly speeds preparation of the permit by automating cost calculations. GIS is also used to help call takers identify problem areas and prepare work orders.

- **DPWES Storm Water Planning Division** – Used GIS to analyze flood inundation areas from possible dam breaches and to identify properties at risk of inundation.
- **The Health Department** – GIS has been a vital part in the planning and response for health issues that include: H1N1 Influenza vaccinations; childhood lead risk evaluations; Medical Reserve Corps staffing; and mapping of private drinking water supplies and sewage disposal systems. Most recently, GIS was used to validate a request for a Governor's Exceptional Medically Underserved Population (EMUP) designation in an area of the county where barriers to accessible primary and preventive health services adversely impact the health status of under and uninsured populations.
- **Park Authority** – Uses GIS for a wide range of planning and management activities including conducting existing site condition analysis and impact analysis; identifying environmental and cultural resource features, constraints and spatial relationships; preparing graphics, base maps, countywide park network maps; park trail maps; as well as in analyzing candidate properties for addition to the park system. Parks also released a web-based mobile application for navigating county trails. GIS is an essential tool regularly used in all park planning, resource management and development projects.
- **The Department of Planning and Zoning** – Uses GIS programming and analysis to handle tasks that would have been an overwhelmingly manual effort in the past. The assignment of regional transportation analysis zone numbers to each of the county's 358,000 individual parcels has made this a routine and quick process. GIS streamlines the Area Plan Review (APR) through the use of the Comprehensive Plan Amendment Tracking System (CPATS) which uses GIS to generate notices for plan amendments applications. This has largely eliminated errors and provided easy access to the latest information. GIS is integrated into DPZ's Land Information Systems (DPZLIS)



with a number of benefits including, easy and quick access to staff report maps, generating environmental assessments, and custom page size maps of any county location. These specialized features have been particularly beneficial in zoning enforcement issues where the public can now view maps to check permit and enforcement cases via the internet. They have been using 3-D analysis to visualize and analyze building size and impact on neighboring properties and thereby make more informed determinations about proposed construction. Most recently they implemented the Planning and Zoning Map web portal and have implemented an interactive Planning and Zoning map viewer to find the location of zoning applications and are developing an Interactive Comprehensive Plan Map as well.

- **Department of Transportation** – Utilized GIS for a variety of agency needs and projects. GIS provided tremendous insight in understanding and predicting commuter use of Park & Ride facilities and helps direct the department to locate and manage new/potential facilities. The Department of Transportation uses GIS technologies for the

Fairfax Connector bus system's demographic analysis, route planning, and bus stop management. Many of these techniques are also used for the Employer Services program to best promote commute alternatives for Fairfax employers and their staff. In addition, a number of transportation features, including the Residential Permit Parking Districts (RPPD), Yield-to-Pedestrian, and No Parking inventories are managed through GIS. GIS is used to plan and analyze bus stop locations and pedestrian safety improvements. New uses of GIS include interactive mapping to better aid the public in navigation and identifying recreational features for bicycle riders.

- **Pest and Disease Management** – Rabies, West Nile virus, Tuberculosis, and Lyme disease are compiled and analyzed spatially on a continuous basis using GIS. GIS is also used extensively in the planning, routing, surveillance, and/or enforcement activities for environmental health (food, water, onsite and vector).
 - **Fire and Rescue Department** – Makes substantial use of GIS and as a result is experiencing significant savings. For instance, in the process of responding to Fire Hydrant and Insurance queries, the GIS saves about 50% of staff time in determining distances. Additionally a 98% staff time savings were estimated in the countywide analysis of identifying five-minute response time areas for fire stations – a factor crucial to establishing areas within response time limits. More recently they contributed to building a routable centerline for the new CAD/911 system which will improve response times. They also used GIS to help evaluate possible alternative locations of a fire station near Herndon.
 - **Fairfax County Police Department** – Has had significant success in its use of GIS for crime analysis. In multiple instances, the Department's crime analysts identified spatial patterns in crime incidents, successfully predicted subsequent crime locations, and arrested suspects (for instance, GPS larcenies, burglaries). The training of police crime analysts as criminal profilers is heavily dependent on the use of GIS. The GIS Branch worked with the Department to implement a total new Police Incident viewer which will include a substantially larger map and faster response time. A mobile version is available. Police also used GIS to plan the county-wide events for the National Night Out – Community Watch Program. It highlighted all the activities and enabled efficient routing of staff to cover the large number of events in one evening.
 - **Emergency Management** – GIS was used extensively in planning the response to flooding in the Huntington area. The GIS maps were helpful for both field personnel and staff in the Alternate Emergency Operations Center. It was also used for extensive planning for the inauguration of President Obama – since close coordination with federal and neighboring agencies was necessary. GIS also supported 'snowmageddon' in 2010, super storm Sandy and the Derecho responses in 2012, and regularly supports the Office of Emergency Management in table top exercises.
 - **Department of Systems Management for Human Services** – Uses GIS regularly as part of tracking and analyzing county demographics. Their key system is the Integrated Parcel Life-cycle System (IPLS) which contains demographic information by parcel. Most recently they have used GIS to analyze and demonstrate the wide range of languages spoken in the county, broken out by language, area and are doing ongoing analyses with the 2010 census update.
 - **Office of Community Revitalization** – Now has a web site with GIS maps as an integral part. The site and its maps provide a geographical context for people interested in revitalization in the county.
 - **Government Partners** – The GIS now contains data from Fairfax Water and the Cities of Fairfax and Falls Church on hydrants – an important data element for the CAD/911 maps.
- The breadth of GIS utilization across the county, and the extent of its integration into the overall IT architecture are reflected in the award winning plans and efforts of the preceding years. The awards recognize GIS's achievement in fostering and expanding the use of GIS applications to improve county operations:
- In FY 2014, Fairfax County was awarded a Special Achievement in GIS award by Environmental Systems Research Institute (ESRI) for its contributions to ESRI's national community mapping service. Now a highly detailed base-map is available for all users of ESRI's tools.
 - In FY 2011, Fairfax County GIS, as part of the regional team carrying out the Regional Routable Centerline project, was awarded a Special Achievement in GIS award by ESRI. The award recognizes organizations that use GIS to "improve our world – and set new precedents throughout the GIS community."

- GIS was also the recipient of the 2010 VA Governor's Technology COVITS award for its 'Virtual Fairfax' web based application, also written in the Washington Post.
- County GIS programs received the VA Governor's Technology COVITS award for DPWES' use of GIS in routing refuse collection vehicles.
- In FY 2005 the county's GIS won FOSE's E-Town Award for GIS Integration.
- The county's GIS program received a "Best of Breed" award in the 2003 Digital Counties Survey. This survey and award recognition was conducted by the Center for Digital Government, in partnership with the National Association of Counties.
- Fairfax County's GIS received international recognition via the ESRI Special Achievement in GIS

(SAG) Awards for both the GIS Branch work and the countywide efforts in GIS.

- The National Association of Counties recognized Fairfax County for its use of GIS in the reapportionment process.

Fairfax County is a member of the Northern Virginia GIS managers group, an informal group that regularly meets to coordinate activities. The GIS Branch also works closely with the State's GIS agency (Virginia Geographic Information Network, now part of Virginia Integrated Services Program), and now directly participates in the Emergency Operations Center when it is activated.

The county is a member of NACo's GIS committee which looks at key GIS issues affecting counties. Each year, GIS hosts "GIS Day" which promotes the use of GIS and development of new GIS applications through countywide competition and awards.

Portion of new My Neighborhood report

2.3 Customer Relationship Management (CRM)

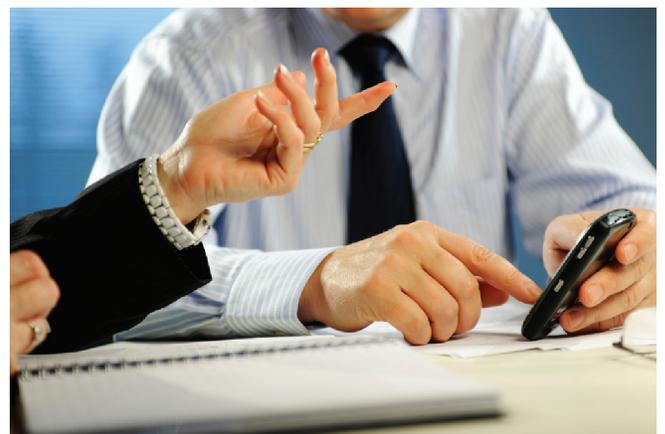
Expectations for modern access and interaction with government services continue to expand dramatically. Agencies need automated ways of capturing interactions, providing and tracking response to inquiries, requests for services and complaints, and the enterprise needs a common solution that integrates with e-government capabilities and the Web, enables improved customer experience and public engagement, and provides an enterprise-wide view of constituent needs and concerns, and county response. Fairfax County continues to respond to this growing need through Customer Relationship Management (CRM) technology applications. CRM provides agencies and their staff improved opportunities for providing citizens quick and convenient access to information about county programs and services. Current solutions in place that have served a variety of agencies' needs for tracking interactions, response to citizen inquiries and requests, as well as issues management include Internet Quorum (IQ), and Siebel commercial-off-the-shelf(COTS) products. These solutions were successfully implemented over time for a variety of applications and have resulted in significant staff productivity and efficiency improvements in supporting information exchange with citizens through multiple communication channels: in-person, telephone, e-mail, via the internet and mobile devices.

For example, the Offices of the Board of Supervisors and the Clerk to the Board provided enhanced opportunities to record, route, and manage interactions with constituents and organizations. Subsequent phases have provided expanded capability throughout the county. The web enabled system replaced several custom applications and provides functionality for the Office of Public Affairs, Consumer Protection, Office of Human Rights and Equity Programs Department of Public Works and Environmental Services, County Executive and the County's Legislative function within the County Executive's office, Department of Purchasing & Supply Management, Department of Transportation, and the Alternative Dispute Resolution Program.

The Clerk to the Board of Supervisors uses the IQ Boards and Commissions Module to track appointments and nominations to boards, committees, and councils and maintain a complete correspondence history regarding contact with these individuals. Consumer Protection Division's modules include Complaint Tracking, License Administration and

Taxicab Inspections. The systems enable staff to rapidly open and begin investigating cases. By expediting the administrative components of case investigations, the initial response time is reduced, resulting in earlier detection of consumer protection violations. The historical research required to discern how past cases were resolved is now expedited; cross-referencing cases between investigators allows department staff to share online information pertaining to the same or similar consumer protection violations. Further, the system facilitates collaboration between department investigators on complaints and resolution techniques, and also enables citizens to access complaint histories of businesses online in order to research and determine the pros and cons of doing business with those merchants. In addition, the system allows Fairfax County Police access to license information for all solicitors, peddlers, pawnbrokers, massage therapists, taxi drivers, etc.

The Office of the County Executive uses the IQ Legislative Tracking Monitor application to assist county agencies monitor, review, respond to and track state legislation when the Virginia General Assembly is in session. The system includes the automated downloading of legislative bill information from the Commonwealth's Legislative Information System, thus eliminating the need for a legislative aid to manually track constituent requests. The Human Rights Commission uses the system to create, track and report on case workflows allowing the HRC investigators to meet multiple requirements. The system also streamlines complex discrimination processes and addresses privacy concerns for investigator and conciliators.



A project steering committee consisting of DIT and agency staff that use or have interest in call center functionality was established to manage the implementation and integration of the CRM. Initial efforts involved development of the overall framework and pilot application in the Office of Public Affairs and supports Office of Public Affairs customer center sites in several locations. Frequently requested information and telephone numbers for county services and home owner association data is available in a centrally used knowledge base to support consistent distribution of information.

Office of Public and Private Partnership (OP3) is the clearinghouse for partnership information in Fairfax County. CRM efforts in OP3 have consolidated disperse contact lists of, business partners, and resources enabling staff to utilize the system as a data depository for contacts, accounts, cases, service requests, solutions, correspondence, activities, and allocation of staff and volunteer resources. The Department of Tax Administration (DTA) Audit Division migrated from the use of multiple Microsoft Access databases and Excel spreadsheets to the CRM which offered improved accountability, increased security, and instant interactive reporting tools.

Enterprise-wide CRM supports a holistic view which aids in making well-informed decisions about service

delivery to the county's diverse population and improves communication through seamless unified access to information via the county's web site, IVR systems, cable TV, in-person, live Call Center agent, mobile devices, and most importantly going forward - Social Media. Goals for the refreshed strategy include enabling screen pop interaction with case record information, contact interaction records, transparent case escalation, and consolidation of the legacy CRM solutions. The enhancements will provide cross-browser mobility access to CRM, reduce maintenance, training, and support while increasing productivity in efficient seamless integration with the county's office products. Assessment of the next generation of CRM technology that provides improved native integration with the county's messaging environment, more agile mobile app development and viability for 'cloud' solution opportunities in alignment with county agencies' initiatives determined that Microsoft Dynamics to be the best overall fit for integration with the county's enterprise information systems environment, user friendly screens and navigation, flexibility and overall cost. Cloud version is also used for on-demand, as needed CRM requirements. In FY 2016 -2017 the project will continue to migrate legacy CRM applications into the consolidated platform and coordinate business processes to align with enhanced public access and customer engagement goals.

2.4 Enterprise Content and Document Management

The county established a strategic approach to content and document management by developing an integrated solution on an enterprise platform. Content Management is the foundation for the organization and use of information from structured data (through business applications), and unstructured data in electronic or imaged documents (word processing documents, spreadsheets, e-mail, and reports).

The county's enterprise information architecture continues to be refined to provide efficiencies and enhanced capabilities to support enterprise document management. This solution enables the county to have a rich document management and business process flow for retrieval and storage of vast quantities of required paper records. The enterprise document management technology with incorporated workflow solutions improves business process efficiency and productivity by providing the capability to view hard copy records through automated applications in order to provide

required services. In addition to fast and reliable business processes, the document management solution minimizes the need for storage of paper records, reduces storage space needs, protects against mounting storage costs, and reduces human and physical plant asset risks associated with handling voluminous stacks of paper.

Content management integrates with document management. For business activities that also rely on a variety of documents, the document management initiative employs technology at the beginning of a document's life cycle (originated as hard and soft copy) using the system to catalogue and track the documents and enable automated workflow processes through the entire life cycle. This comprehensive approach and associated implementation of technology is called Integrated Document Management (IDM). In seeking enterprise technology solutions that satisfied multiple needs,

the county found that the best products for content management engines also incorporated document management needs. The integrated solution is more cost-effective, and provides a seamless integration for use of information found in imaged documents and information in databases and other systems required for a complete business transaction. The integrated document and content technology provides the ability to organize electronic documents, manage content, enable secure access to documents, route documents, automate related tasks, and facilitate document distribution.

Document imaging is another component of IDM which has been embraced to provide a more efficient and effective way to store and retrieve documents for normal work productivity and to handle legal mandates for records retention and retrieval associated with case management, FOIA and e-Discovery as well as to enhance information published via the WEB in WEB searches. With the dynamically growing volumes of information, management of paper based documents which often times has extended retention time requirements is not effective and for many processes, not feasible. Consequently, many county agencies are implementing IDM with their business systems to alleviate the demand for increased storage space, improve business processes, and protect against disasters that can potentially destroy important paper documents. Integrated Document Management solutions encompass core business practices, as well as provide better archival and disaster recovery capabilities.

IDM technology has been implemented in a number of agencies over the past five years, for example, document work flow projects in the Office for Children (OFC), multiple initiatives for the Department of Family Services, the Commercial Inspections Division of Land Development Services in the Department of Public Works and Environmental Services to meet the needs of the sewer lateral section and complaints tracking, the core modules of an automated Accounts Payable System in the Department of Finance and on-going work for the Juvenile and Domestic Relations District Court. Although the individual departmental business requirements vary for the use of IDM technology, the following benefits and quality improvements have resulted from these projects:

- Increased staff productivity from employees' ability to share and act on accurate information through the delivery of the right documents at the right time
- Enhanced communication and collaboration through shared information
- Improved speed of information and transaction flow throughout county agencies
- Improved access and security through controlled access to sensitive documents
- Reduced time spent searching for critical documents
- Improved disaster recovery through electronic storage and backup of information that is far more secure than paper
- Reduced clerical, paper, printing and storage costs

Document management and imaging projects, especially when work flow automation is used, can greatly improve operational efficiency and effectiveness. In addition, these projects deliver enhanced information security. Granular control over each piece of data enables access by authorized users, and only for the specific information they need and are authorized to access. These solutions provide business units with the capability to reduce costs, accelerate business transactions, ensure regulatory compliance, and support cross-department communication.

IDM is an integral part of the county's FOCUS (ERP) project, where images of hard copy documentation that may need to be embedded in an electronic profile or case record. Documentum-Captiva is the primary enterprise-wide platform, compatible for use by the SAP ERP application implemented for FOCUS. The solution is integrated with business processes supporting Accounts Payable, Contracts, and Human Resource Management. First phases went live in 2011 for the accounts payable processes with the Documentum/EMC Invoice Manager and Captiva scanning for invoice processing for the Department of Finance. The integration of the FOCUS SAP financial and procurement modules allow for automated matching of properly submitted vendor invoices against authorized encumbrances and receipts, reducing the amount of time program managers and the Department of Finance would spend approving and paying standard invoices. IDM is also an important technology for other agencies supporting major programs

such as the Department of Family Services in the Self Sufficiency and Children, Youth and Family programs. In FY 2015 the county will continue to support the current initiatives of IDM and workflow technology for projects in the Department of Family Services, Office of Children, and other agencies. The Juvenile and Domestic Relations Court and the General District Court are collaborating with the VA Supreme Court on workflows and document management for court files and possible integration with the state's case management system. Future strategy includes interfaces with Circuit Court systems.

Fairfax County continues to expand Enterprise Content Management System (ECMS). Department of Planning and Zoning determined that an ECMS and Scanning would afford the best solution for automating business processes and ending the dependence on ever-expanding physical files. DPZ ECMS will provide immediate access to Planning and Zoning related documentation, record recovery, re-filing process and

minimize expenses associated with space, shelving, storage of paper documents. DPZ will continue work to develop the ECMS in FY 2016. The on-going strategy also includes integration with the County Archivist goals for over-all records management both in-house flow from agencies and also using cloud based solutions.

New contracts for Records and Archival Document management system, cloud, and related professional services were awarded in FY 2015. The new solutions will accelerate the ability for agencies to streamline processes across various agencies and allow the user community to retrieve and view records on demand.

Content and document management will continue to be a long-term strategy to affect the integration of structured and unstructured electronic and paper-based information and file types in optimizing and enhancing overall information management, transparency and decision processes.

2.5 Technology Infrastructure Initiatives

To ensure continuous delivery of quality services in a cost-effective and resource-efficient manner, Fairfax County's technology infrastructure is designed with the flexibility to respond to the county's evolving technology and business requirements, and to take advantage of new trends that provide improvements in operational efficiencies and cost. The county established a strategic approach to building agile enterprise infrastructure architecture by consolidating and standardizing IT resources, implementing scalable and elastic infrastructure components, moving toward service-based technologies, and automating processes while ensuring visibility, security, and accountability. This strategy has been recognized by the county's ITPAC (see Section 1), national IT research firms, and industry providers as a well-developed capability with a resulting competitive overall cost (TCO).

Virtualization and Consolidation

Virtualization and Cloud Computing technologies serve as the fundamental foundation for this strategic direction. In FY 2007 - 2008 Fairfax County established virtualization as the primary means to deliver server-based (hardware & OS) infrastructure services. The virtualization of server-based infrastructure services introduced technologies such as VMware, Symmetric/Asymmetric multiprocessing, enterprise-class server

hardware, grid computing, etc. The virtualization of server-based infrastructure not only provided a means to securely and efficiently share server resources ("do more with less"), but the county utilized virtualization to consolidate and standardize the overall server landscape. By implementing virtualization for server infrastructure platform, Fairfax County eliminated and/or consolidated server hardware which not only increased total cost of ownership (i.e. predictable costs, streamline of upgrades), but also reduced power, cooling, and physical server hardware footprint in the data center, thereby contributing to countywide "Going Green Initiative". These resource efficiencies also allowed Fairfax County to optimize management of resources, maximize data throughput, increase control over delivery of IT services, simplify administration, and ultimately has established a foundation for the virtualization and standardization of other infrastructure components and cloud technology.

In FY 2008 - 2009 Fairfax County continued the move toward virtualization/ consolidation of infrastructure architecture by implementing storage virtualization (SAN, NAS, Grid storage), application virtualization (Terminal Services, Citrix), virtual desktop infrastructure (VDI), and network virtualization (VLAN, Load balancers) technologies. Virtualization of the infrastructure architecture has not only improved

overall physical and operational efficiencies, but also provided better resource/ capacity planning and provisioning of resources. This scalable, resource-efficient, and standardized architecture has become the base for Fairfax County to build out the "dynamic" data center. The dynamic data center provides the enabling infrastructure to move Fairfax County to the next phase of the strategic goal for the infrastructure architecture which is providing infrastructure as a service or the establishing of an internal private cloud. In FY 2010 Fairfax County received federal stimulus funding for energy consolidation projects of which a portion is dedicated to initiatives related to desktop power management, enterprise server consolidation and telework initiatives designed to lower power consumption, decrease greenhouse gases and reduce the county's carbon footprint. The virtualization/ consolidation effort has reduced servers on an average ratio of 60:1.

In FY 2011 IT enterprise platform and infrastructure projects received national recognition for reducing the county's carbon footprint as well as providing operational efficiencies. The 1E PC power management deployment automatically shut down 14,000 - plus end-user PCs across 55 offices when not in operation resulting in energy and cost savings. The County also deployed Nomad Enterprise to deliver operating system upgrades, software deployments, and patches to PCs, servers, and sites without disruption. Additionally with implementation of a self-service software deployment portal, users can locate and install software without requiring IT staff to leave their office.

The virtual infrastructure environment was further improved in FY 2013 through FY 2015 with the ultimate goals of reducing cost and providing highly available infrastructure without compromising the quality of services. Several key examples include:

- **Self-Service Virtual Resources** - With an automated workflow, platforms and associated resources (OS, Storage, Network, Virtual Service Machines, etc.) will be pre-allocated for users to choose from service catalogues. With the design and deployment of self-service provisioning resources, the county and agencies will gain great efficiency, visibility and flexibility into supporting business needs through the use of IT.
- **Highly Available/DR Ready Virtual Infrastructure** - Started in FY 2013, critical services and systems were identified for high availability and for being

capable of sustaining unplanned events such as data center outage. Such services shall be designed to serve customers in a distributed/load-balanced mechanism, rather than standby/failover. The completion of production failover, in the event of an unplanned outage, for the county's ERP system (i.e. FOCUS) has been completed successfully. DIT is continuing to expand this HA/DR capability for county mission critical systems and agency applications to be able to failover to an off-site data center.

- **Verisign Identity Protection (VIP)** - Application installed on county-owned or employee-owned desktops and mobile devices provides two-factor authentication for remote connection to county computer resources. VIP improves convenient and safe remote accessibility for employees.
- **Microsoft Lync** - A collaborative tool that has the ability to improve efficiencies and communications. This best-in-class communications application is an instant messaging client with video conference capabilities, online meeting, and telephony that enables real-time unified communication and resource sharing between employees at work and from remote locations. Along with PC's, Lync can also be accessed from smart phones and tablets for increase mobility, allowing for increased productivity and support for agencies delivering services to its citizens. The implementation of Lync's enterprise-wide Unified Communications (UC) platform for IM, conferencing, video, and Enterprise Voice will give the county a feasible future transition from the current voice platform, allowing for a reduced Total Cost of Ownership of IT communications. Primary business drivers for the deployment of Lync included improved communications; increased collaboration; Enterprise Voice (EV) and Unified Communications (UC); reduced TCO of IT; increased mobility and; improved business integration.

Cloud Computing

In FY 2010, the county considered the potential benefits of in internal private cloud infrastructure by leveraging features from virtualization/consolidation base and other enterprise infrastructure initiatives (i.e. county institutional network, PSTOC, e-Gov enhancements, etc.). Complimentary technologies such as enterprise data backup/recovery, mirroring, clustering, data de-duplication, replication, centralized infrastructure management tools, enable the county's private cloud capability. In addition to server

provisioning services, with the advancement of the enterprise dynamic data center, the county provided additional cloud-based infrastructure services such as storage provisioning, password management, application provisioning, and business continuity. By using virtualization as the base technology, the county's dynamic data center/private cloud is able to have internal and external components that provide different services based on costs, capabilities, needs, and SLAs. This is being aligned with the requirements of agencies and delivers value by enabling improved and incremental solutions, products and services that can be more effectively deployed. With this strategy, county agencies do not need to implement independent infrastructures for most services, and can minimize costs associated with common applications that are not needed by all employees at all times.

In FY 2015 the county will continue to build on the internal private cloud by standardizing and enhancing the dynamic data center infrastructure (i.e. unified network/server/storage infrastructure, more efficient business continuity technologies, enhanced security infrastructure, etc.). The remote access portal that went live in 2014 enhanced employee access to the county's ERP system FOCUS (based on their security profile) from anywhere over any device securely. The data renders itself to the appropriate form factor.

The county also integrated selected Public Cloud services as part of the effort to increase the quality of service, security and reduce cost; for example, Symantec VIP is a cloud based service that will replace hardware token and serve as another factor of authentication. With these enhancements, the county will meet its strategic goal for an agile infrastructure architecture meeting technical and business demands by providing a platform to not only deliver infrastructure services via Internet in a shared, measured, secure, service-based, scalable, and elastic means; but also applications, business processes, and security services.

Microsoft Office 365- Cloud Collaboration and Productivity Services

In order to provide business productivity solutions to county users and agencies, DIT deployed a solution which allows users to write documents, create spreadsheets, develop presentations, and transparently collaborate to carry out agency business functions, as well as cross-agency business functions.

In FY 2015, DIT began deploying Microsoft Office 365, a cloud-based suite of business productivity and collaboration services which the county has adopted to help meet its needs for robust security, reliability, and user productivity. Office 365 combines the familiar Microsoft Office desktop suite with cloud-based versions of Microsoft's next-generation communications and collaboration services—including Microsoft Exchange Online, Microsoft SharePoint Online, Office Online, and Microsoft Lync Online—to help users be productive from virtually anywhere through the internet.

The deployment of this cloud-based business productivity technology solution will allow for integrated document collaboration, Lync messaging, e-mail, content storage, and online learning for county personnel to expand their skills to stay competitive in an increasingly technology-based environment. Most importantly, Office 365 has enabled the county to deliver increased redundancy of services to agencies and end users, as well as cloud-based storage, providing significant cost-savings for IT storage of county data.

Enterprise Communications Integration

Contemporary voice communications integrated with data, video, presence and messaging is an organizational requirement in today's technological landscape. As government agencies are asked to do more with less, they rely heavily on a variety of communications technologies to improve effectiveness in meeting the growing needs of constituents. Integrating voice, video, data and presence information onto a common broadband infrastructure is the new reality. This convergence brings tremendous benefits to geographically dispersed enterprises such as Fairfax County. The near-term strategy implemented



Session Initiation Protocol (SIP) provider network trunking services replacing legacy carrier circuits, and implementation of pure IP connections to the carrier cloud. These will yield a communications architecture that is secure, robust and scalable at a lower cost than traditional Public Switched Telephone Network (PSTN) connections and enable advantages in functionality and features this leading-edge technology provides.

The county's strategy for the next generation voice architecture takes into account complex technical requirements for an integrated network strategy. The solution supports a range of configurable telecommunication instruments and communications technologies and also provides a single logical architecture for addressing the business and operational needs of agencies located in multiple locations throughout Fairfax County. Integration of the voice and office productivity platforms, often referred to as Unified Communications, was implemented as a pilot in selected county facilities, with wide-scale implementation imminent. The integration of the Avaya platform with Microsoft Lync creates a seamless work environment where information and communications share common attributes and interwoven capabilities. The integration of voice and the enterprise Microsoft messaging platforms will result in a Unified Communications (UC) capability, resulting in agencies and end users being able to make phone calls from Microsoft Lync from anywhere on mobile, wireless devices and ultimately reduce traditional desk telephones. This also includes opportunities to integrate with commercial wireless platforms to be deployed as part of smart-phone Windows Surface and iPad device capabilities.

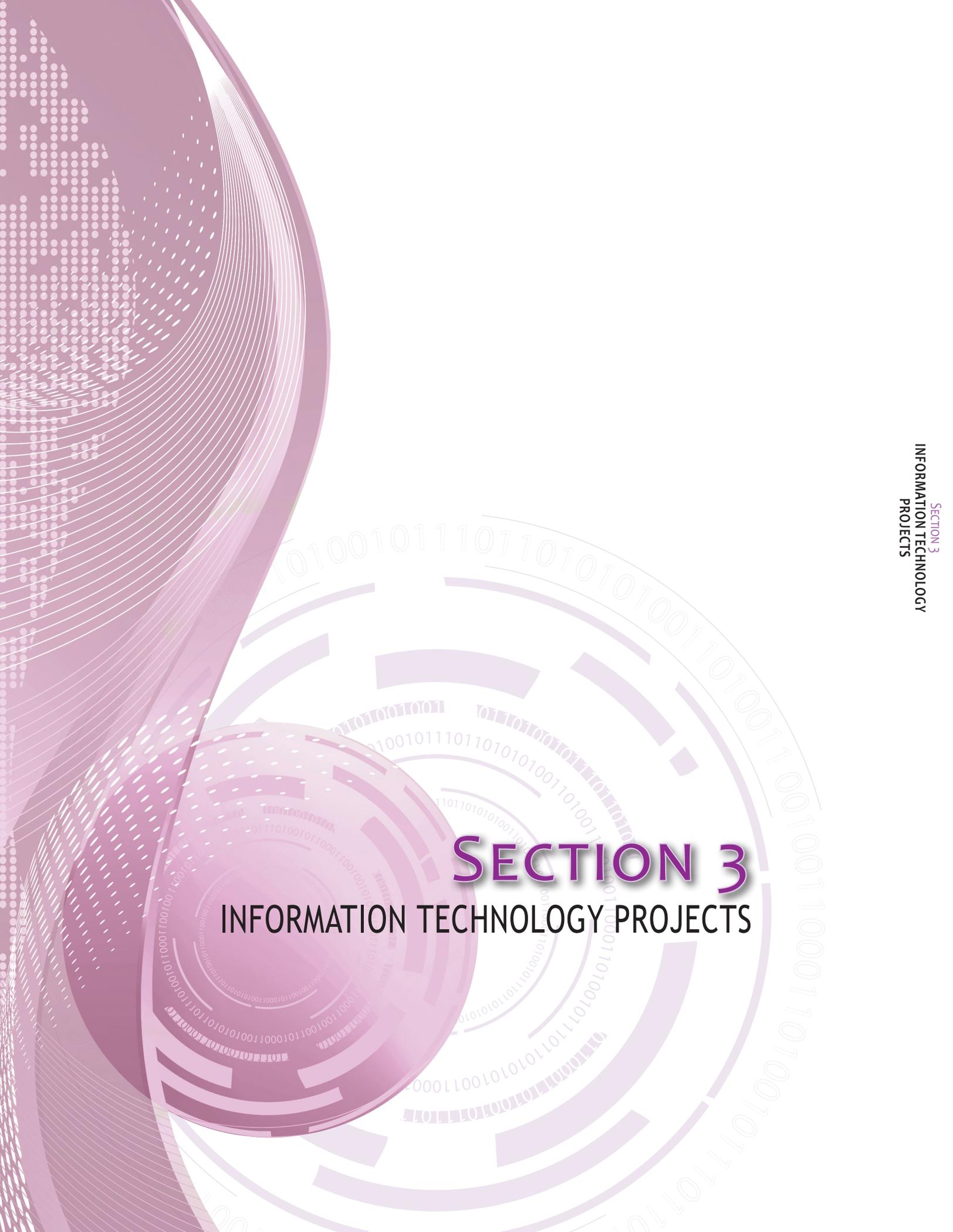
The county is also embarking on a strategy that enhances its wireless communications and broadband capabilities designed for integration with the county's robust, secure fiber infrastructure. This initiative will leverage the county's private voice wireless (radio), network and telecommunications programs for a unified architecture and support scenario. This strategy, designed to leverage federal broadband grant opportunities and public-private partnerships, will provide improved services and better cost efficiency than similar commercially available broadband solutions, especially supporting public safety response operations and regional interoperability.

Mobile Device Management (MDM) and 'Bring Your Own Device' (BYOD)

To enhance the county's goals for mobility, telework, operational cost efficiency, Continuity of Operations Planning, and environmental stewardship and 'green' IT, a major component of the enterprise technology infrastructure initiatives includes technology that enables secure use of hand-held wireless mobile devices for data and business transactions, to include county issued and as appropriate employee personally owned devices. Enterprise mobile device management (MDM) solutions are policy and configuration management tools that can be incorporated into an organization's enterprise network and platform enabling infrastructure. Today's solutions allow smart-phones, and tablets to include Apple, Blackberry, and Android (for example). The primary solution delivery model is on-premise, but it can also be offered as a service (SaaS), or through a cloud. With the county's mature 'private' enterprise cloud, this technology was adopted and is being implemented and integrated with the enterprise network (see Section 5). In assessing the most optimal tools for use, the county considered lower cost options for casual users of their own devices for enterprise applications such as e-mail and calendaring, and a more robust solution for employees whose daily work is mobile in nature and conduct transactions crossing internal business systems and secure data. Symantec's SMM enables balance for overall security, flexibility, device support and cost containment needs. Due to dynamic change in the marketplace in end-user devices, the strategy focus is shifted from the device to the data

Big Data

Given the interdependencies and shared business drivers of the cross agency applications and information, DIT resources were leveraged during FY 2012 to maximize benefit-received opportunities for the primary land use audience - citizens, the land development industry, and county agencies. DIT's "Big Data" initiative focused on the consolidation of structured and unstructured land use data from several disparate land use systems in a GIS & web based data warehouse/business intelligence product. The consolidated data provides land use customers with property development history profiles, and "free style" search capabilities of past, present and future land use activities that drive economic growth.



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SECTION 3

INFORMATION TECHNOLOGY PROJECTS

3.1 Technology Overview

Purpose

The Information Technology investment fund (Fund 100-C10040 – formerly Fund 104), was established in FY 1995 to strengthen centralized management of available resources by consolidating major Information Technology (IT) projects in one fund. Based on the 1994 Information Technology Advisory Group (ITAG) study, this fund was created to account for spending by project and is managed centrally by the Department of Information Technology. The E-911 Emergency Telephone Service Fee, a General Fund transfer, the State Technology Trust Fund, and interest earnings are sources for investment in eligible Information Technology projects. However, in FY 2001, the E-911 Emergency Telephone Service Fee revenue and related project expenses were moved to Fund 400-C40091 (formerly Fund 120 E-911), to satisfy a state legislative requirement that E-911 revenues and expenditures be accounted separately.

The county's technology improvement strategy has two key elements. The first is to provide an adequate IT infrastructure that supports operational improvements and efficiencies for county agencies. The second is to redesign business processes and apply technology to achieve large-scale improvements in service quality and efficiencies. The county's long-term commitment to providing quality customer service through the effective use of technology is manifested in service enhancements, expeditious response to citizen inquiries, round the clock on-line service opportunities, improved operational efficiencies, increased productivity and performance capabilities, and better information for management decisions and transparency.

FY 2016 Project Funding Recommendations

In FY 2016 funding recommendation of \$6.42 million, for investments in IT projects is supported by multiple funding sources (general fund, interest income, and cable revenues). These initiatives meet one or multiple priorities established by the Senior Information Technology Steering Committee and include a mix of projects that benefit both citizens and employees, and balance new and continuing initiatives with the need for securing and strengthening the County's technology infrastructure. Funded projects will support initiatives in general county services, public safety,

human services and enterprise technology security and infrastructure. Although many initiatives meet more than one of the technology priorities, for narrative purposes, projects have been grouped into only one priority area.

Funding Priorities

The Senior IT Steering Committee, which is comprised of the County Executive, Deputy County Executives, the Chief Financial Officer, and the Chief Technology Officer, adopted five strategic priorities that guide the direction of IT investments. These long-standing priorities include:

- **Mandated Requirements** - Provide support for requirements enacted by the Federal Government, Commonwealth of Virginia, Board of Supervisors, Court ordered or resulting from changes to county regulation.
- **Completion of Prior Investments** - Provide support for multi-year lease purchases, to implement a project phase, and/or to complete a planned project.
- **Enhanced County Security** - Provide support for homeland security, physical security, information security, and privacy requirements.
- **Improved Service and Efficiency** - Promote consolidated business practices; support more efficient government; optimize management and use of county assets and data; enhance systems to meet the expectations and needs of citizens; and promote service that can be provided through the Internet/e-government. This includes corporate and strategic initiatives that add demonstrable value to a broad sector of government or to the county as a whole, which also provide productivity benefits and/or effectively manages the county's information and knowledge assets.
- **Maintaining a Current and Supportable Technology Infrastructure** - Focus on technology infrastructure modernization which upgrade, extend or enhance the overall architecture or major county infrastructure components, including hardware, software, and its environment. Ensure that citizens, businesses and county employees have appropriate access to information and services.

In accordance to FY 2016 Budget Guidelines, agencies were advised to submit project funding requests that met one or more of the five above Senior IT strategic priorities; as well as specifying tangible project outcomes; clear project start and completion dates; anticipated implementation and budget plans over the next five years, including subsequent fiscal year(s) impact on enterprise wide infrastructure, maintenance and support; linkage to agency strategic and business goals; and that the project would be completed and maintained without additional staff. FY 2016 funding requests for existing projects were restricted to projects requiring additional support to meet existing contractual obligations, to complete a planned phase of the project and where appropriate progress against existing project plans had occurred. The process is designed to facilitate the development of a solid business and technical case for IT project requests, and to update the business and technical status for continuing projects:

PRIORITY	FY 2016 Advertised Funding
Completion of Prior Investments	\$1.07 million
Enhanced County Security	\$0.80 million
Improved Service and Efficiency	\$1.28 million
Maintaining a Current and Supportable Technology Infrastructure	\$3.27 million
TOTAL	\$6.42 million

Completion of Prior Investments - \$1.07 M

Some major projects that are funded through the IT Investments process are organized into multiple phases that may be completed over several years, thus require more than one year of funding to complete and deliver long term benefits. Also, some may rely upon or leverage other investments

In FY 2016 funding of \$226,000 is recommended for continued support for the County's planned on-going maintenance of essential Geographic Information System (GIS) data. Planimetric data layers make up many of the key GIS layers used in most of the maps made in the county including: Police, Fire and Rescue, the Departments of Transportation, Housing and Community Development, Public Works and Environmental Services, Planning and Zoning, and Tax Administration. These key data sets are used in all of the county's web applications that incorporate maps, and in nearly all of the county's public safety vehicles through the CAD/911 system in the CAD maps.

Funding of \$450,000 is recommended in FY 2016 for continued implementation of the Tax Systems Modernization Project to redesign the county's tax and revenue systems and eliminate technology risks and functionality gaps of existing legacy mainframe systems for the Personal Property and Business Professional and Occupational Licensing (BPOL). This project will facilitate a simpler process for citizens to fulfill their tax obligations and pay for services by modernizing the internal processes used for assessing, billing, and collecting county taxes and other revenues. In FY 2016 the project will continue incorporation of multiple business process improvements including web, mobile applications, e-billing for all taxes, and enhanced web portal functionalities.

FY 2016, funding of \$400,000 supports the Customer Relationship Management (CRM) project for development of a unified user approach for handling citizens' service requests, case management, and issue tracking. Customer Relationship Management (CRM) is a foundational technology that supports the County's strategic goal of improving the quality and efficiency of responses to citizen requests/issues by integrating current stovepipe applications, implementing on-line 24x7 access strategies, integration of social media tools, and techniques to enhance the overall customer experience and manage service requests via a single user enterprise-wide interface tool.

Enhanced County Security - \$0.80 M

Funding of \$800,000 is recommended to replace and consolidate multiple Identity Management systems currently serving Fairfax County across the enterprise. In order to meet security, management, and compliance demands, this project will replace and consolidate the existing SAP and other enterprise Identity Management systems with a single solution that provides a more robust, agile and flexible tool to integrate across all county IT systems. The new system will allow for centralized authentication by bringing all user accounts into a single common directory for the County's IT enterprise. This project will also integrate with the Governance Risk and Controls (GRC) security reporting product to enable stronger security and enhanced monitoring and control of access and user accounts.

Improved Service and Efficiency - \$1.28 M

Projects funded in FY 2016 provided for improved service and efficiency in provision of services to the residents and the business community in Fairfax County. These included projects supporting the county's e-government and public access programs, transparency and initiatives that improve county processes resulting in enhanced efficiencies and service delivery.

In FY 2016, funding of \$528,000 is recommended to provide the necessary support required to meet the increasing demand for county's web, e-government and e-transactions services as well as improved navigation, web content synchronization, mobile applications, social media integration, transparency, Web 3.0, support of the county's intranet (FairfaxNet) and continued compliance with DOJ ADA requirements. The e-government programs also enhance citizen participation with county government through online public input processes.

FY 2016 funding of \$450,000 is provided for implementation of a contemporary Enterprise Document Management platform that will enable county agencies to automate workflows, improve business process efficiencies and productivity, reduce paper records and storage needs, and make data more accessible, easily retrievable, secure and compliant with records management regulations such as Freedom of Information Act (FOIA). Implementing a more current document management solution will enable on-line search of digital documents and provide significant improvement in efficiency for county agencies using data as an integral part of daily operations. It also allows more effective use of advanced analytics for decision making, resulting in service improvements for Fairfax county residents.

FY 2016 funding of \$300,000 is included to support the Community Services Board's Tele-psychiatry Project which plans to extend tele-psychiatry services out to more rural communities of Fairfax County. Tele-psychiatry is a component of telemedicine services that uses interactive audio, video and other electronic media to provide diagnosis, consultation, and treatment to patients in need of mental health services. This project will establish static and mobile telepresence or teleconferencing systems to serve underserved populations of young and adult clients in Fairfax County.

Maintain a Current and Supportable Technology Infrastructure - \$3.27 M

In an ever evolving technology and communications environment, maintaining current and supportable technology architecture is a challenge that must be continually addressed to ensure performance, operability, security and integrity of business operations and information. The county's technological improvement strategy strives to balance business needs that require technology investments with the desire to adopt contemporary but relevant and supportable technology industry trends, as well as the ability to leverage existing infrastructure. Projects funded in FY 2016 will support the goal of updating and strengthening the technology foundation where practical, and ensuring that residents, the business community and County staff have appropriate and reliable access to information and services.

Funding of \$1,800,000 is recommended in FY 2016 for strategic infrastructure and expert services supporting complex multi-phase enterprise-wide business transformation IT systems for County general services, enterprise technology, security and infrastructure, and corporate systems including the County's ERP (Enterprise Resource Planning) and related business systems. This funding supports necessary integration of business application and infrastructure systems components to meet the County's IT architecture and interoperability goals in alignment with county enterprise technology plans to enhance opportunities for county/schools shared cost and operational efficiency goals.

Funding of \$1,000,000 is recommended in FY 2016 to start the first phase of a multi phase project to replace and consolidate several antiquated legacy land use systems that support zoning and development plan review, building permits, license issuance, code enforcement, inspections, and cashing activities for multiple agencies in Fairfax County. The aging systems that will be replaced in phases over the next few years include the county's Land Development system (LDS), Plans and Waivers System (PAWS), Zoning Application System (ZAPS), the Fairfax Inspections Database online system (FIDO), as well as various other smaller systems used to provide services to citizens and county inspectors.

Funding of \$100,000 is recommended in FY 2016 to support the expanding need for internal county users to access county systems remotely. This project supports telework capabilities, disaster recovery, and increasing reliance of agency mobile workers on wireless solutions. Enterprise wide standardized access control methodology enables secure identity authentication for authorized access to County networks, data, and systems. This project supports secure access from remote locations and provides improved security, reporting, and data analysis.

FY 2016 funding of \$270,000 will begin a multi-phase effort to replacement the existing legacy phone systems in Fairfax County Fire and Police Stations with the county's current AVAYA enterprise telecommunications platform. The existing phone system in Police and Fire Stations was installed in 2001, it has reached end of life and is no longer supportable. The AVAYA platform will provide streamlined voice architecture, better internal communications, reduce recurring expenditures, and improve equipment serviceability.

Funding of \$100,000 is recommended in FY 2015 to provide for on-going information technology training and certification in recognition of the challenges associated with maintaining skills at the pace of technological changes and to ensure that the rate of change in information technology does not out-pace the County's ability to maintain proficiency. As the County's workforce becomes increasingly dependent on information technology, training support has become more essential.

Budget ID Number	PROJECT TITLE	FY 2011 ADOPTED	FY 2012 ADOPTED	FY 2013 ADOPTED	FY 2014 ADOPTED	FY 2015 ADOPTED*	FY 2016 ADVERTISED**
FUND 40091							
2G70-056-000	Public Safety Subscriber Radio Replacement	2,314,500	2,314,500	2,314,500	2,314,500	3,531,352	3,531,352
2G70-059-000	Mobile Computer Terminal	2,314,500	2,314,500	2,314,500	2,314,500	1,616,200	1,616,200
3G70-078-000	E911 Telephony Platform Replacement					2,100,000	2,180,000
3G70-079-000	Public Safety CAD System Infrastructure					1,260,000	1,180,000
	TOTAL FUND 40091	4,629,000	4,629,000	4,629,000	4,629,000	8,507,552	8,507,552
FUND 10040							
2G70-003-000	Oblique Imagery – GIS		128,212	150,744	146,280		136,000
2G70-004-000	Planimetric Data Acquisition – GIS		150,000	187,000	92,000	162,000	90,000
2G70-006-000	Information Technology Training	75,000	75,000	193,668	75,000	200,000	100,000
2G70-018-000	Enterprise IT Architecture and Support		2,163,200	3,500,000	2,500,000	2,900,000	1,800,000
2G70-020-000	Internet/Intranet Initiatives – e-Government		400,000	400,000	200,000	675,000	528,000
2G70-026-000	Fairfax Radio System Consolidation	862,882	550,167	550,167			
2G70-027-000	CSB Initiatives	175,000					
2G70-034-000	Pilot Courtroom Technologies	75,000					
2G70-036-000	Remote Access		200,000	200,000	100,000	200,000	100,000
2G70-038-000	Telecommunications Modernization	1,742,000					
2G70-040-000	Facility Maintenance Management	665,550					
2G70-041-000	Customer Relationship Management					200,000	400,000
2G70-045-000	Public Safety Architecture Modernization	843,705	1,215,000				
2G70-051-000	Data Reporting – DFS	100,000		300,000			
2G70-053-000	Retirement of Legacy Systems			500,000	500,000	400,000	
2G70-054-000	Police In Vehicle Video System			3,670,000	1,860,000		

Budget ID Number	PROJECT TITLE	FY 2011 ADOPTED	FY 2012 ADOPTED	FY 2013 ADOPTED	FY 2014 ADOPTED	FY 2015 ADOPTED*	FY 2016 ADVERTISED**
2G70-055-000	Volunteer Management System		200,000		175,000		
2G70-067-000	e-Summons	350,000			175,000		
2G70-069-000	Tax System Modernization – Tax/Revenue Administration			1,000,000	800,000		450,000
IT-000003	Data Loss Prevention Project				500,000		
IT-000004	Emergency Management Portal				200,000		
IT-000005	GRC Auditing				750,000		
IT-000007	Enterprise Project Management					200,000	
IT-000009	Participant Registration System					300,000	
IT-000010	Electronic Plan Submission and Review - LDS					600,000	
IT-000011	ePlans - DPZ					400,000	
IT-000012	ParkNet Replacement					600,000	
IT-000014	Sheriff Civil Enforcement System					315,000	
IT-000017	Enterprise Document Imaging						450,000
NEW	Identity Management System						800,000
NEW	County-wide Telepsychiatry Program						300,000
NEW	FIDO-LDS System Replacement						1,000,000
IT-000021	Fire and Rescue and Police Stations Telephone Replacement						270,000
	TOTAL FUND 10040	5,467,349	9,251,579	8,841,579	6,113,280	6,752,000	6,424,000
	GRAND TOTAL: IT PROJECTS	10,096,349	13,880,579	13,470,579	10,742,280	15,259,552	14,931,552

*Adopted Budget funding reflects new investment for each fiscal year and does not include incremental investments made during annual Carryover or Third Quarter Budget Cycles.

** Advertised funding reflects amounts requested for IT Projects, funding is pending Board of Supervisor's approval.

3.2 Public Safety

2G70-056-000 Public Safety Subscriber Radio Replacement Project (E911 - Fund)

Project Description

This project is a technology refresh/life-cycle replacement program for all MHz digital two-way radios (portable and mobile) in use by Fairfax County Police Department, Fire and Rescue Department, and the Sheriff's Office. The radios that were replaced were physically 7-9 years old, over 12 years old in terms of today's technology. They had reached end of life and no longer met Public Safety needs or could maintain critical interoperability with National Capital Region (NCR) neighbors. The new Public Safety radios have the necessary feature set for encryption of voice traffic, thereby limiting outside scanning and interception of the radio traffic. The newer radios are compatible with other NCR jurisdictions, and were deployed throughout Fairfax County's Public Safety agencies to maintain operational performance, employee safety, and effective operations in a regional emergency event. Failure to have radio compatibility would compromise mutual aid situations, result in failed response, and increased risk of injury or death to public safety personnel and the public.

Project Goals

This project provided for the replacement of all Public Safety voice subscriber portable and mobile radios, which enhances communications security, ensuring that Public Safety users are on the same platform to provide immediate and systematic response to emergencies, and maintains performance, availability, reliability, provides capacity for growth due to increase in county population and demand for public safety services.

Progress to Date

Technical requirements for the upgrade of Fairfax County's public safety radio system was awarded in January 2010 with project completion and final system acceptance in December 2012. During this upgrade, an additional antenna site (Bailey's Crossroads) was added to the System and both the Primary Antenna Control Site and System Master Site were moved from their previous unprotected sites to the Public Safety and Transportation Operations Center (PSTOC).

With the completion of the Radio Upgrade Project, Fairfax County completed the next logical step in the modernization process, which was the replacement of its Public Safety Subscriber Radios. Over 6,000 portable and mobile radios were procured in September 2013. All radios were programmed to proper frequencies and talk groups, tested, and deployed. This project was completed in the Fall of 2014. Major milestones included:

- Development of specifications for replacement radios.
- Procurement of the necessary radios for all Public Safety with the appropriate feature set and at the lowest cost - Complete.
- Program, test and deploy replacement radios to user agencies - Complete in FY 2014 - 2015.
- Provide training to user agencies - Complete FY 2015.

Project Budget

Funding of \$3,531,352 is included for annual increment of a seven year lease payment schedule.

Return on Investment

Keeping the technology current for essential public safety systems is critical to first responder operations, community security and protection of public safety personnel. The new subscriber radios provide end users with updated equipment that allows increased functionality and serves as a basis for future growth. Nearly all new infrastructures now support multiple non-proprietary protocols, IP and digital technology, and various types/mixes of mobile radio equipment using fast data transmission speeds. This replacement provides the county with a radio capability that will allow incremental migration to newer technologies in the future. The return on investment is realized by the performance, productivity, and effectiveness of public safety services, with seconds enhancing life/safety results.

2G70-059-000 Mobile Computer Terminal Project (E911 - Fund)

Project Description

Fairfax County public safety communications relies heavily on mobile data communications for the dispatch of equipment and personnel to emergencies and other non-emergency requests for public safety services. Digital communications are used to allow field units (e.g., police, fire and rescue, and sheriffs) to receive dispatch messages, event notifications, to self-initiate events, make traffic stops, check on licenses, registrations, to maintain their status for response, and to communicate with one another and the Department of Public Safety Communications (DPSC) without the use of voice radio or intervention of a dispatcher at the DPSC. The entire structure of the County's public safety response system, including staffing at the DPSC, is based on the heavy utilization of mobile data communications for critical public safety activities.

Project Goals

This project supports the recurring life cycle replacement of Mobile Computer Terminals (MCT) to insure this critical equipment is kept contemporary and functional for public safety personnel who respond to emergency and non-emergency requests for services.

Progress to Date

The last MCT replacement cycle occurred in FY 2008 through FY 2012 and was a 5 year life cycle replacement for the MCT in vehicle computer equipment. At that time 5 years was deemed to be a reasonable replacement term for the mobile computer fleet.

Project Budget

Funding of \$1,616,200 is recommended the fourth year (FY 2016) of this life cycle replacement.

Return on Investment

In excess of 150,000,000 transactions are currently processed each year via MCTs through the mobile data communications infrastructure and therefore, it is critical to keep this equipment contemporary and available for the many operations utilized by the field personnel. The current fleet has approximately 1500 units including spares. It is anticipated that this number will continue to grow throughout the life cycle replacement of computer equipment as additional functionality is added that can be made available to additional users in the mobile environment.

MCTs keep officers on the street versus behind a desk as they provide an efficient, quick method where the officer can complete reports and perform routine queries from a mobile device in their vehicle. In addition to the many functions currently performed on the MCT units, police officers use the MCT for mobile field reporting. The County has incorporated a field reporting system into records management and integrated it with the CAD system allowing officers to complete investigative reports online from their vehicle with most of the preliminary information downloadable from the event history reports in the CAD system. This enhancement saves countless hours previously expended writing field investigation reports longhand by patrol personnel.

3G70-078-000 E911 Telephony Platform Replacement Project (E911 - Fund)

Project Description

This project supports replacement of hardware and software for the 9-1-1 call processing environment that enables Fairfax County's Public Safety Answering Point (PSAP) to receive and process the emergency calls within the boundaries of the PSAP calling area. As a result of the end of life cycle of the current hardware and software and termination of maintenance support as declared by the 9-1-1 telecommunications service provider and industry, this project is a required update of the PSAP communications technology environment to continue 9-1-1 call processing functions. Widespread adoption of rapidly advancing technologies like text, video, Voice over Internet Protocol (VoIP) and the saturation of high speed broadband has raised the

expectation of 9-1-1 services for the citizens of Fairfax County. Improvements are needed to support new requirements and expectations. Fairfax County's 9-1-1 call processing phone platform currently operates on the traditional vendor telephony supplied platform and equipment that is based on a major change in telephony platforms reaching end-of-life.

Project Goals

This project will support a multi-phase effort to transition the county's core 9-1-1 system architecture to the new supportable platform that is technologically up to date, has more robust functionality to facilitate future requirements and capabilities, and an industry supportable platform into the future.

Progress to Date

Phase 1 of the project replaced proprietary hardware with a call processing system based on industry standards (NENA i3) in order to maximize the county's investment in a replacement system; established the policies and procedures required to enable the public to send an emergency text message to 9-1-1 when the situation warrants using text rather than voice; and developed requirements for an interim text-to 9-1-1 solution as a beginning transition for improved 9-1-1 service to the hearing impaired and deaf communities. The competitive procurement process was led by the Fairfax County team in collaboration with other local jurisdictions with final award planned for the first quarter of CY 2015. Also, during this phase, a comprehensive statement of requirements for procurement of a 9-1-1 Telephony Platform that is NG9-1-1 compatible was completed, and a contract awarded for provision of a high level plan, gap analysis, and GIS and network technology requirements to support project goals. Subsequent project phases include development of regional solutions as well implementation of additional NexGen 9-1-1 operational capabilities including use of pictures and videos in emergency operations.

Project Budget

In FY 2016 \$2,180,000 is recommended for required hardware and software upgrades and overhaul of existing switching equipment for 9-1-1 call processing at the Department of Public Safety Communications.

Return on Investment

The improved systems for 9-1-1 services enabled by this project will provide 9-1-1 services and capabilities to the citizens of Fairfax County at a high degree of functionality and in a technologically appropriate manner. These technology upgrades strengthen system resiliency and reliability, and establish a technology foundation for implementation of Next Generation 9-1-1 multimedia capabilities such as text, video and photographs. Future phases will improve system interoperability with other jurisdictions, call overflow with other Public Safety Answering Points, and location accuracy. The introduction of the new 9-1-1 call processing technology platforms will eventually introduce cost savings to Fairfax County as specialized proprietary systems are replaced with commercial off the shelf components which ultimately will reduce maintenance costs.

3G70-079-000 Public Safety CAD System Infrastructure Project (E911 - Fund)

Project Description

The Public Safety Computer Aided Dispatch System (CAD), requires a hardware and software replacement life cycle to keep the functionality and capabilities of the system current with updated technology, hardware, improved software and additional required security and functionality. The CAD System is the core technology supporting the intake and dispatch response functions for all Fairfax County public safety agencies including Police, Fire and Rescue, Sheriff, and the Department of Public Safety Communications (DPSC 9-1-1 Center) in their core mission of keeping Fairfax County and its citizens safe. It is used by the call takers and dispatchers to process all calls for service received on 9-1-1 and other requests for emergency and non-emergency services in Fairfax County, as well as for mutual aid interoperability. Over the next five years, this project supports replacement of the aging supporting hardware infrastructure and required supporting software licenses, workstations and associated licenses, and the CAD system.

Project Goal

This project's goal is to refresh/update the current Public Safety 9-1-1 CAD system and components: equipment

(hardware) and applications (software) over a five year plan, and baseline a rationalized replacement structure for the future. The existing equipment was purchased over five years ago and is starting to exceed normal life expectancy. The Fairfax norm for IT foundational and workstation equipment is five years, keeping in mind usability, maintenance and supportability. This also facilitates planning as software solutions evolve in the marketplace. Keeping the infrastructure current allows the system to sustain better performance, reduce risks for equipment failures, keep pace with changing technology capabilities, and keep pace with increasing security requirements.

Progress to Date

Staff from the Department of Public Safety Communications, the public safety agency stakeholders, the Department of Information Technology and advisory experts have researched the issues associated with sustaining 9-1-1 Center performance, best practices for hardware replacements, security and resilience, the state of the industry and readiness to be able to operationalize and integrate next generation 9-1-1 needs and the marketplace for solutions and current solution viability.

Each phase of the proposed project plan addresses the replacement for the components and related software versioning processes with activities including identification, purchase, installation, software license obligations, and ultimate transition to a new CAD solution. The hardware replacement schedule will be coordinated with the partner agencies to ensure minimal impact with other Public Safety projects that may be occurring at the same or similar times.

Project Budget

In FY 2016 \$1,180,000 is recommended for the second year of the five year plan established for this project.

Return on Investment

Public Safety agencies rely on the CAD System to provide mission critical lifesaving and property protecting services to

Fairfax County and the surrounding areas. By replacing hardware in a timely fashion, the County safeguards against equipment failure and legacy vendor abandonment of aging technology that could potentially result in service interruptions with grievous consequences. This project incorporates the requirements needed to upgrade and replace all CAD system components, including software versioning over a five year period to keep the system contemporary and upgraded and to allow for continued use by the Public Safety user community. The need for improved CAD system capacity and functionality will continue on into the future as a mandated funding requirement. Using a phased, life cycle approach insures that required funding is spread out over a five year period and thus relieves the impact of a major system overhaul in any one fiscal year by the county.

2G70-007-000 Electronic Records Management System Project - Juvenile and Domestic Relations District Court (JDRDC)

Project Description

Fairfax County's Juvenile & Domestic Relations District Court (JDRDC) and DIT have partnered with the Supreme Court of Virginia's (SCV), Office of the Executive Secretary to implement a Case Imaging System for the scanning, retention, electronic viewing and submission of court documents. The Juvenile and Domestic Imaging System (JDIS) is a custom built SCV solution that includes built-in interfaces with the existing SCV's Judicial Case Management System (JCMS), and other requirements unique to Fairfax County's JDRDC. This implementation introduces shared compatibility between the state and the county with the integration of court documents into the core system of record, JCMS. This shared initiative will ultimately benefit all courts, related agencies and jurisdictions throughout the Commonwealth of Virginia.

Project Goals

Provide simultaneous and instant access to court records with improved security. The JDIS project seeks to reduce or eliminate labor intensive and time consuming hardcopy record searches, retrieval and re-filing processes. The JDRDC will realize improved efficiencies and reduced costs associated with storage of paper documents, and provide a means of safeguarding documents with electronic backup capabilities.

Progress to Date

Completion of Phase I and Phase II of JDIS provided the court the ability to capture, display and distribute images

electronically for all juvenile traffic and adult criminal case documents. Additionally, JDIS expedites the electronic delivery and exchange of documents between the courtroom and the post court counter, financial clerk and court services units (CSU).

The juvenile intake pilot for truancy and runaway cases was implemented in Phase III (A) allowing scanned intake documentation to be submitted to the clerk's office for acceptance into the juvenile's electronic case file. In Phase III B, JDIS will enable secure viewing and submission of case file documents for CSU units outside the courthouse and include the remaining juvenile delinquency case types, the use of barcoding, and will also lead the way into limited public viewing.

Milestones

- FY 12 Phase I – Completed in 2011 - The initial phase of the JDIS project began with basic scanning and limited document sharing functionality for juvenile traffic cases.
- FY 12 Phase II – Completed in 2012 - Incorporated adult criminal cases and built upon the systems functionality by enhancing the experience of judges and deputy clerks using the system, especially when utilizing the system in the courtroom.
- Phase III (A) – Completed in 2013 - Initiated the inclusion of the juvenile intake CHINS case document submission and scanning of juvenile CHINS cases in court (Pilot).

- Phase III (B) – Currently In Progress – Estimated Completion: Spring of 2015 will include the remaining juvenile delinquency case types, secure viewing of JDIS documents from remote sites and remote submission of intake documents, and the use of barcoding to automate scanning of summons and subpoena service returns to the appropriate electronic case files.
- Future Phases – FY 2015 and Beyond - Future Phases will provide reports created to automatically run against the Java Case Management System (JCMS) data to provide reconciliation, and increase accuracy of the status of individual cases, especially where probation was ordered, and to ensure an electronic order is submitted to receiving agencies. Additionally, all civil matter case types, both adult and juvenile, will be included in the scanning process before the project is concluded and patrols or interfaces with other outside entities will be evaluated.

Project Budget

Additional funding is not required in FY 2016.

Return on Investment

This project reduces staff time previously expended locating missing files, retrieving and re-filing court records, and shrinks the physical storage space required for court records therefore, eliminating the need for leased space. Response time is expedited for internal and external customers at the Records, Fines and Costs counters, and easier and more efficient access to public court records is provided to the community. JDIS also lowers the incidence of missing court files and documents necessary in the courtroom. Planned back-up systems will enhance data security.

2G70-021-000 Circuit Court Technology Project

The Fairfax Circuit Court is nationally recognized for its delivery of outstanding public service and continues to actively pursue state of the art technological solutions to improve customer support and operational efficiencies. This project covers multiple facets of Circuit Court operations and receives funding through the Commonwealth of Virginia's Technology Trust fund.

Project Description

Court Automated Recording System (CARS) / Court Public Access Network (CPAN) – The Clerk's Office of the Fairfax County Circuit Court is responsible for providing citizens with reliable, timely, and accessible public records. More than 42 million Land Records, Public Service and Probate images, dating from 1742 to the present have been digitized, indexed and loaded into CPAN; a web-based, online retrieval system that is available 24 hours a day, 7 days a week, with more than 2,000 subscribers located domestically in thirty states, the District of Columbia, and internationally in India. Subscribers include citizens, title examiners, law offices, mortgage companies, banks, Commissioner of Accounts, Federal, State and County agencies.

Case Management System (CMS) – The current case management system automates case processing through the court system and includes: case initiation and indexing, docketing and related record keeping, scheduling, document generation and processing, calendaring, hearings, disposition, accounting functions, security, management and statistical reports. Circuit Court completed contract

negotiations in April 2013 and awarded Justice Systems Inc. (FullCourt) a new contract to upgrade the existing case management software to their FullCourt Enterprise web-based browser version which can provide imaging, electronic filing, DMV interfaces, as well as many other enhancements.

Radio Frequency Identification (RFID) – The RFID project became operational during FY 2012 and has incorporated an RFID based system to assist in the real-time tracking of court case file folders as they move throughout Circuit Court. The goal to improve efficiency and customer services by greatly reducing staff time, effort and resources dedicated to searching and locating court case files was met. In FY 2013 additional readers were implemented for coverage in all the judges' chambers. The Circuit Court also expanded the RFID system to include criminal evidence which will allow the criminal section to have an evidence management system for audit, inventory and tracking purposes.

On-Line Scheduling System (OSS) – The Circuit Court recently launched an On-Line Scheduling System (OSS) to allow attorneys to schedule their domestic and non-domestic trials and, civil case trial dates (both jury and non-jury) on-line. The OSS was developed in a collaborative effort with the Fairfax County Department of Information Technology (DIT) with the goal of saving attorneys and court staff time and money by allowing users to select and schedule civil case trial dates electronically without the need to travel to the Courthouse to attend a scheduling conference.

Redaction – The Commonwealth of Virginia passed legislation mandating the Clerk of the Circuit Court to redact the social security numbers (SSN) from all images viewable via CPAN. Over 42 million back-file images have been processed, and the redaction was integrated into CARS for day-forward operations and removes SSNs prior to public view.

Project Goals

Circuit Court modernization initiatives in the Clerk of Court's technology program include:

- Replacement of the 10 year old windows based case management system with a fully integrated web browser based case management system providing civil and criminal processing, imaging and electronic filing capabilities.
- Increase the number of courtrooms equipped with technologies in order to facilitate remote testimonies, audio-visual evidence displays, integrated assisted listening, and interpretation capabilities.

Progress to Date

Past accomplishments include development and deployment of the Court's Land Records Recording System, including document imaging; implementation of the CPAN retrieval system, use of an automated jury management system to administer 60,000 potential jurors annually; deployment of a case management system to control the administration of the Court's judicial case load; development and implementation of paperless probate processing; development and implementation of a streamlined marriage license process which utilizes scanners to import data from customers' operator licenses; implementation of electronic docketing display directing the public to the assigned courtroom. The system provides a foundation for additional capabilities building on the Court's business requirements. Technological system updates are also addressed through this fund.

Milestones

CARS

- Digitized back-file images with associated indices and implemented web-based CPAN, 1999
- Scanned, indexed, and stored all land record documents for electronic processing, 2000
- Added non-deed document processes for indexing and storage (judgment abstract and notices, marriage licenses, financing statements), 2000
- Redesigned processes to include automated cashing

and scanning capabilities to update the public record in a more efficient manner, 2001

- Electronic filing prototype for mortgage releases using the ACH transfer of funds, 2002
- Implemented Public Services cashing system, 2005
- Automated the administration of estates system, 2006
- Incorporated the use of commercial credit cards for payment of fees and taxes, 2007
- Land records Electronic Filing System (EFS) made available to the public, 2010
- Integration of automated scanning in the marriage license application process, 2010
- Integration of redacted data and processes mandated by the legislature, 2012
- Development of the Online Marriage Pre-Application, an online resource used by 50% of all marriage license applicants. Use of the application has significantly reduced customer wait times.
- Creation and implementation of the Electronic Filing System which now accounts for 18% of all documents recorded in Land Records. This has reduced the workload for staff who must scan and mail paper documents.
- Automated document recording system has provided the needed scalability to handle the peaks and valleys of the workload, much of which is driven by the unpredictable housing market.

CMS

- Provided web-based availability of court information on CPAN, 2005
- Implemented electronic docketing display, 2006
- Circuit Court has successfully migrated to the FullCourt Enterprise case management system
- Leveraged other technologies to provide data for public dockets, web dockets and internal CCR systems.
- Initiated the use of workflow queues to streamline processes.
- Initiated the weekly scanning of documents.

RFID

- Complete and operational during FY 2011; Circuit Court incorporated an RFID based system to assist in the real-time tracking of courts case file folders as they move throughout the Court.

Redaction

- Integrated redaction processes and data in current workflows and redacted SSNs from documents available to the public at the Courthouse and via secure remote access as mandated by the legislature.

Project Budget

Funding received from Virginia State Technology Trust Fund revenue (mandated by the Code of Virginia specifically for Court Technology by the State Compensation Board and cannot be used for any other purpose), CPAN subscription revenue, Administration of Justice revenue, and agency funds.

Return on Investment

CARS provides immediate electronic access to CPAN for over 2,000 commercial customers. The system provides added functionality to search for and correct errors that occurred in documents recorded in the previous land records system. Additional benefits include enhanced retrieval and administration of Circuit Court records and an expedited transfer of information to

the Department of Tax Administration (DTA), Geographic Information Systems (GIS) and the Department of Public Works and Environmental Services (DPWES).

The Case Management System's, anticipated imaging and electronic filing enhancements will provide increased efficiencies in the processing of more than 22,000 civil and criminal case filings annually. Multiple parties will be able to access electronic case files simultaneously and file documents from their office or home, reducing the need to travel to the courthouse and provide 24/7 accessibility. Potential interfaces with other jurisdictions will allow the exchange of electronic documents and/or data and eliminate existing manual processes between jurisdictions.

Through the implementation of the RFID project Circuit Court saves considerable staff time and resources previously expended in tracking down case file folders. The RFID repository has been growing annually by approximately 27,000 files. The RFID system significantly improves operational efficiency and ensures the safe guarding of legal records and files.

The Redaction Project enhances the security and integrity of CPAN by removing social security numbers from public view. An added cost savings of the project will be the ability of the software to identify items that may be redacted by future legislative mandates without incurring additional reprocessing costs.

2G70-050-000 Fire Station Alerting Technology Replacement Project**Project Description**

This project provides a turn-key system replacement of fire station alerting (FSA) components. This alerting system is a critical part of the 911 systems and public safety response, and is a requirement specified in the National Fire Protection Association (NFPA) 1221 Standard. This technology life cycle replacement brings the Fire and Rescue Department's (FRD) station alerting system to a technical level that will permit integration with the selected Public Safety Computer Aided Dispatch and Records Management Systems (CAD/RMS).

Project Goals

The business and operational objective is to purchase and implement a proven FSA system that enables Fairfax County to meet the public safety goals of reduced response times, enhanced communication, and

immediate access to relevant and critical information. The goal is to integrate the Fire and Rescue Department's station alerting system with the Public Safety Communication Center systems. The system will reduce reflex time for response by providing immediate unit based visual and verbal alert indication at the time of dispatch and prior to radio voice dispatch, safe lighting and alert process throughout the station, recorded announcement, station alerting capabilities as required by NFPA 1221, and streamline maintenance and support for system components.

Progress to Date

The first phase for the core system infrastructure to interface and align with the new Computer Aided Dispatch System and replace end-of-life infrastructure and network components was completed in all Fairfax County Fire and Rescue stations. Phase II includes

upgrading the remaining infrastructure and components to include implementation and installation of features such as automated voice dispatch, satellite controllers, dispatch timers, and message boards as funding becomes available. The acquisition of hardware for the automated voice dispatch is complete and installation will be coordinated with Departments of Public Safety Communications and Department of Information Technology. Work is also under way to identify user issues to complete interfaces between the county's CAD and the Fire Station Alerting System, and upgrade all fire stations to meet the basic features of satellite controllers, dispatch timers, and message boards.

Project Budget

FY 2016 funding was not requested for this project.

2G70-054-000 Police In Vehicle Video System Project

Project Description

This project installed digital surveillance video cameras in the Police Department's fleet of approximately 650 patrol vehicles to provide secure storage and accessibility of the data captured and leverages the latest technology in support of law enforcement processes. The basic components of the system include the in-vehicle cameras with microphones, a digital recorder, a display component, and a data communications capability. The data will be wirelessly uploaded and transmitted via the County's I-NET to back-end servers for retrieval and network storage.

Project Goals

This project enhances the Police Department's ability to accurately record events, statements and scenes in order to improve public accountability and the ability of the Commonwealth and County Attorneys in court cases. The use of in-vehicle video supports the Police Department's commitment to providing safe, fair, unbiased, and responsible service to the residents of Fairfax County.

Progress to Date

This project is complete with the system deployed in most Fairfax County patrol vehicles equipped with cameras. A successful software upgrade enhanced capability to process data much faster. Video is captured and uploaded daily, and can then be searched, viewed and copied. The videos are introduced as evidence in court after being copied onto DVD'S. Videos are released to the public in compliance with the Freedom of Information Act.

Return on Investment

The Fire and Rescue Department expects to reduce overall response time to emergency incidents through immediate alerting of personnel. The system leverages the CAD system and provides immediate unit based alert indications at the time of dispatch and prior to radio voice dispatch. The process reduces what is known in the industry as "reflex time", or the amount of time between when the call is dispatched and when the response units are boarded by personnel and ready to respond. This is a life-cycle replacement from aging and incompatible equipment to an integrated COTS system. Maintenance and support costs for system components will be streamlined.

This project will be retired in the FY 2016 Adopted Budget IT Plan.

Project Budget

Additional funding is not required in FY 2016.

Return on Investment

In-vehicle video capability provides benefits to the public, the law enforcement community and the legal system across the nation. Locally, the use of in-vehicle video supports the Department's commitment to provide fair, unbiased and responsible service to the residents of Fairfax County in a number of ways. First, in-vehicle video is a valuable aide to criminal investigations through accurate recording of events, statements, and scenes. Video evidence enhances both the Commonwealth and County Attorneys abilities to prove their cases. Second, in-vehicle video enhances the Department's accountability to the public by providing the Department an invaluable, objective perspective when reviewing the actions of officers. Third, in-vehicle video provides the Department with a means to observe and assess its primary method of service delivery. Video footage can be reviewed, critiqued, and then used to develop better practices, policies, and training for staff. This can improve officer safety, quality of service, and public satisfaction. The overall return on investment is increased trust and confidence by the public in their police department.

2G70-067-000 Electronic Summons Project (e-Summons)

Project Description

This project is designed to develop automated solutions to streamline the traffic ticketing and summons processes by implementing an integrated Electronic Summons (e-Summons) solution to capture and transfer traffic summons information from the point of issuance, through the Police Department to the Courts. The project intends to implement tried and known best - in - breed solutions used by other progressive police departments nationally, and optimize operational processes developed from the earlier pilot phases into the next phase.

Project Goals

Project goals are to provide efficient and timely public access to electronic traffic case records, enable quick citizen access to traffic case records, reduce the time officers spend on each traffic stop thus lessening the inherent risk involved in traffic stops on the highway, improve accuracy and efficiency of data capture increase the efficiency with which traffic summons are issued and adjudicated in Fairfax county, eliminate redundant paper and manual processes, and enhance data quality as it related to accuracy, reliability, and timeliness.

Progress to Date

Equipment and initial e-Summons configurations for police vehicle and motorcycles were piloted and tested in earlier phases of this project. Fairfax County Police Department identified a contemporary and integrated e-Summons solution to build on that foundation and implement a robust and well integrated e-Summons solution that includes integration and interfaces with other stakeholder groups and systems including the Courts, Department of Public Safety Communications (DPSC)/ CAD 9-1-1, the Police Records Management System, and DIT. The full implementation of an e-Summons solution will cover 36 police motorcycles and approximately 950 vehicles in Fairfax County.

IT-00013 Police Records Management Refresh Project

Project Description

This project supports replacement of the current Police Department Records Management System (RMS) as the existing software has reached its end-of-life and is no longer supported by the vendor. This project will ultimately impact nearly all aspects of police work and police information collection.

Project Budget

FY 2016 funding is not required; anticipated revenues from the newly mandated court fees (details below) will directly support e-Summons implementation in Fairfax County.

(In July 1, 2014 the Virginia General Assembly added new provisions to VA state law (Virginia Code § 17.1-279.1) which permits the assessment of an additional \$5 as part of the cost of each criminal and traffic court in each localities district and circuit courts. The Fairfax County Board of Supervisors approved an amendment to Fairfax County Code to adopt the state law. Effective on August 1, 2014 as specified by the legislation all funds generated from the new fees are to be used solely to fund software, hardware, and associated equipment costs for the implementation and maintenance of an electronic summons system in Fairfax County. Funding from the ordinance will also support the purchase of new peripheral equipment such as handheld devices, portable printers, driver's license scanners, and barcode readers. All funds received will be posted to the e-Summons project as part of regularly scheduled budget reviews.)

Return on Investment

e-Summons is an automated solution that enables police officers to issue traffic tickets safely and more efficiently with greater accuracy, reducing manual processes, and eliminating data entry errors that can have potentially serious repercussions for the public, courts and the police department. A fully integrated e-Summons solution eliminates redundant data entry, reduces duplication of effort between agencies, and streamlines court scheduling and docketing processes creating multiple opportunities to improve existing operations. Additional benefits include near real time electronic access to traffic case information for payment of traffic fines.

Project Goal

This project aims to replace the current Police Records Management system (ILEADS) with the next generation case management solution that fully utilizes and supports the present and future police department needs and business processes, maintains close integration with the current 911 Dispatch (Computer

Aided Dispatch – CAD) system, and eliminates existing system limitations including persistent deficiencies in connectivity with mobile units. The lack a persistent connection between the police vehicles and the database has caused performance issues when officers interact with citizens and transmit reports.

Project Budget

Funding of \$1,000,000 was included as part of FY 2014 Carryover for the first phase of replacing the Police Department's current Records Management system. This project does not require additional funds in FY 2016.

Planned Project Schedule

Planned activities include:

- Requirements analysis, contract award and a start on development of the new RMS – FY 2015.

IT-00014 Sheriff Civil Enforcement System Project

Project Description

The Office of the Sheriff, in collaboration with the three Fairfax County Courts and the Court Technology Office is developing an Advanced Civil Enforcement System (ACES) to automate all existing civil enforcement business processes, and to replace the current ILEADS module slated to be decommissioned in January 2016. The system will upgrade and automate the civil enforcement interface between the Sheriff's Office and the courts to meet the demands of processing large volumes of service documents on a daily basis, enhance security, and provide civil records repository with automated backup features. The system will introduce mobile features and future interfaces with other County agencies including DIT/GIS, Department of Tax Administration, and the Commonwealth Attorneys' Office.

Project Goal

The Sheriff's Office is required by Virginia Code 8.01-293 to execute civil process within their jurisdiction. The goal of this project is to replace the current Civil Enforcement Module so that the Sheriff Office can continue meeting its statutory mission with an automated electronic civil enforcement solution that interfaces with all three Fairfax County courts and provides enhanced efficiencies by electronically processing, distributing, and tracking service documents. The project aims to reduce Sheriff's Office staff time dedicated to delivering, locating, retrieving and re-filing civil records, and eliminate the risk of lost or damaged files. The system introduces secure electronic

- Completion of development activities, interfaces, data migration, testing training and implementation - FY 2016-2017.

Return on Investment

A modern Records Management System (RSM) is a critical necessity in large police departments across the country. A new RMS system will allow Fairfax County police officers to more efficiently respond to incidents, issue electronic summons and complete reports on the scene of incidents rather than having to wait to enter case information at a field office, station, or other locations. A modern system assures more accurate, timely, reliable and accessible information on events, and enables the Police Department to more efficiently act upon incidents, from initial response through tracking, investigation and reporting.

signatures and bar coding to the civil process. When fully implemented the new Civil Enforcement system will provide consistency and standardization for the Sheriff's Office and all three courts, facilitate consistent retention policies, and improve customer service including more timely and efficient viewing of civil records.

Project Budget

FY 2016 funding is not required for this project.

Planned Project Schedule

Following requirements analysis, RFP and contract award, Phase 1 kickoff is planned for FY 2015. Phase 1 activities include automating the civil process, barcoding, electronic signatures, reporting and statistics, GIS and mapping, financial processing, mobile capabilities, and uni-directional interfaces (Courts to the Sheriff's Office) with anticipated Phase 1 go live date in FY 2016.

Phase 2 work planned for FY 2016-2017 will include public private web access, mobile solutions, and bi-directional interfaces with the courts and other county agencies.

Return on Investment

A core function of the Sheriff's Office is to ensure timely execution of a variety of services for various courts. The Civil Enforcement application provides efficiencies and

cost savings to the Sheriff's Office, including the potential to reduce miles traveled based on route optimization and the development of business rules concerning scheduling a service for completion; reduced data entry requirements using sensors in handheld devices and

designing the appropriate user experience; and on-line query on the status of papers served reduces the need to answer phone calls on service status. Additionally, fee collections will be at risk if the number of services completed per deputy per day is decreased.

IT-00015 Commonwealth's Attorney Case Management System Project

Project Description

This project will replace an end of life legacy case management platform in Fairfax County's Commonwealth's Attorney's Office with a modern software application and provide for supportable technology hardware, software and infrastructure to improve the operational efficiency and streamline business processes.

Project Goal

Project goal is to replace the current legacy case management system in the Commonwealth's Attorney Office with a modern comprehensive case management software system that will provide improved workflow tools, streamline processes, provide enhanced accountability and improve office efficiency. Other components of the replacement will include conversion of all legacy data, the ability to scan arrest warrants and interfaces to other county departments such as police.

Project Budget

This project was funded at FY2014 Carryover. Additional FY 2016 funding is not required.

Planned Project Schedule

In FY 2015-2016 work will continue with business process review, requirements analysis and market research to assess available and viable software application systems.

Return on Investment

An updated case management system will significantly improve management and tracking of a large volume of criminal cases handled by the Fairfax County Commonwealth's Attorney's Office. Improvements such as barcode scanning of arrest warrants, auto-generated legal documents, and the automated syncing of attorney calendars will dramatically reduce data entry by office personnel. Generating real-time case assignment reports showing the number of cases assigned, types of cases, and where cases fall into the case lifecycle will streamline the current difficult task of case assignment.

IT-00021 Fire and Rescue and Police Stations Telephone Replacement Project

Project Description

This project supports replacement of legacy telephone systems in all Fairfax County Fire and Police Stations. The current telephone systems were installed in 2001 and are no longer supported. The project will transition all Fire and Rescue and Police stations phones systems to the County's current enterprise voice platform. The stations will benefit from all the common enterprise telephone features such as extension to cellular phones, recording calls, and detailed automated number and locator information, station information to public safety answering points (PSAP), forwarding of voicemail, integration of individual direct inward dial numbers assigned, desk phones and cell phones. Once integrated into the enterprise voice system, a police officer or fire fighter can be reassigned to a different station without changing phone numbers. All

public safety sites will be linked together through the enterprise voice platform. Additionally, the planned transition to the county's enterprise telecommunication platform will meet state mandated requirement that all emergency calls from a phone station provide PSAP with sufficient location identification information to ensure emergency response.

Project Goal

The goals of this multi-phase project are to provide better internal communications by placing all public safety stations on the enterprise voice platform utilizing the county's I-NET and streamlining public safety stations voice communications by using common technology tools such as computers, telephones and wireless integration.

Project Budget

FY 2016 funding of \$270,000 provides for the first phase of the transition of public safety stations (Fire and Rescue and Police) phones systems to the county's current enterprise voice platform.

Planned Project Schedule

This is a new multiphase project planned for FY 2016 - FY 2018.

Return on Investment

In addition to communications efficiencies and compliance with state mandates, transitioning the current phone systems in Fire and Police stations to the

county's enterprise platform which uses contemporary voice and phone technologies will offer the county substantial savings in recurring maintenance and operational expenses. Once fully transitioned to the enterprise platform, the county will realize an estimated \$35,000 savings in annual maintenance, and \$107,000 in annual operating expenditures. Also station equipment will fall under the terms and conditions of the enterprise contract which provides for a two hour response time for voice service calls. Streamlining the voice architecture, improving internal communications, increasing staff productivity, reducing recurring costs, and maintaining serviceability of equipment are all priorities of this project and will provide significant return on investment to Fairfax County.



3.3 Corporate Enterprise

2G70-002-000 Orthoimagery Update Project - GIS

Project Description

This project is part of the county's ongoing effort to maintain aerial imagery in the Geographic Information System (GIS). GIS provides county staff and citizens the means to electronically access, analyze and display land related data. The imagery is used in the My Neighborhood viewer, the Digital map viewer, the new 3-D viewer (Virtual Fairfax) and in all county web and desktop mapping applications.



Plane used to acquire ortho images

Project Goal

This project's goal is the continued implementation of a four-year cycle of updating orthoimagery for all 407 square miles of Fairfax County with high resolution data needed by county applications and users.

Progress to Date

In FY 2013 the four-year imagery update cycle was updated with the latest data set acquired from the state. The county has cost-sharing partnership with the state to obtain the higher resolution imagery for specific Fairfax County needs.

Project Budget

No new funding for orthoimagery will be necessary until the next update cycle in FY 2017.

Return on Investment

Multiple county agencies benefit from the use and availability of high resolution orthoimagery data. Orthoimagery is used successfully in property appeals cases by allowing the county to effectively justify increased property assessments and help citizens with

home assessment valuations. The imagery is also utilized in resolving zoning enforcement cases, often providing definitive information about when illegal structures were built, thus helping the county maintain desirable neighborhoods and safe structures. Use of aerial photography has reduced the need for field visitations when county staff has a need to reconnoiter an area for various reasons.

Orthoimagery serves as a highly accurate quality controlled layer in GIS that can be used to accurately locate features (e.g., building outlines, streetlights, storm water features, and sanitary sewers). It provides the basis from which many of the fundamentally important GIS layers are derived. The aerial imagery used to create the orthoimagery is of high enough quality and accuracy that it can be used for the county's planimetric update project, saving the cost of additional imagery acquisition. Orthoimagery is also available in the county's public web applications that include maps, which enables users view of aerial imagery of any area of the county. These applications serve about a million maps per year and enable public users to view parcel outlines, hydrography, as well as major and minor roads. Orthoimagery also serves as a base for the 3-D imagery in Virtual Fairfax.

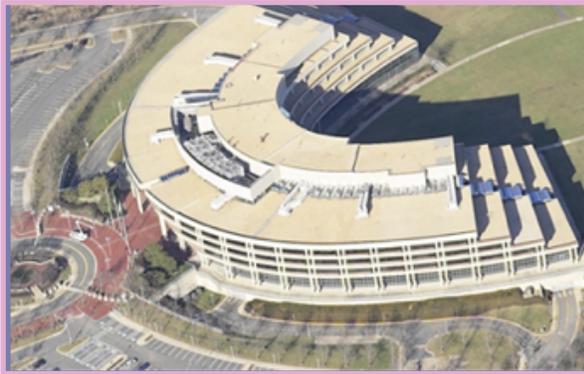


Sample ortho image

2G70-003-000 Oblique Imagery Project - GIS

Project Description

Oblique imagery enables users to view the sides of buildings and structures, ascertain the urban character of a location, and measure the heights of visible features. The project collects images of every location in the county from at least four directions (N, S, E, and W) enabling agencies such as the Department of Public Works, Tax Administration, the Department of Public Safety Communication and Public Safety Agencies to reduce field staff time by using virtual visitation. Oblique imagery augments orthoimagery which is taken directly overhead and does not capture the sides to structures. Together, both sets of imagery are complimentary parts of the spatial data in the GIS data warehouse, giving county-staff access to a wide range of geo-spatial information about Fairfax County required in their business processes.



Sample Oblique image

Project Goal

This project's goal is to provide oblique imagery as a useful and key component of the county's spatial data warehouse that also serves as a historic reference imagery base.

Progress to Date

The county has complete oblique imagery libraries for calendar years 2003, 2005, 2007, 2009, 2011 and 2013. The next update is scheduled during calendar year 2015. The new imagery acquired has much higher resolution than before (3" resolution vs. 4") and will be more useful for evaluating properties and creating 3-D building objects for Virtual Fairfax. The imagery is currently available to county users through desktop, Citrix, and web (GEM) applications. The GIS office offers regular training in use of the imagery and its software. The use of oblique imagery is leveling out after substantial increases over the past several years.



Plane used to acquire oblique images

The county will also acquire a new software tool so that the imagery can be served via the web with functionality needed by tax assessors and others. This will enable integration of oblique imagery with other applications and reduce usage of more cumbersome software used from the initial image delivery.

Project Budget

FY 2016 funding of \$136,000 is recommended for this project.

Return on Investment

The Oblique Imagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits to its users. In particular, The Department of Tax Administration (DTA) has found the ability to see all sides of a structure to determine material composition, floors, decks and other features very useful to its operations in successfully reducing the time and expense involved in staff field inspections.

Oblique imagery is particularly useful in public safety since it enables staff to view and measure the sides of buildings to determine risks, site lines, rescue apparatus requirements, and other key features. The oblique imagery is now used 24x7 in the CAD/911 system to assist call takers in correctly identifying incident location and to assist dispatchers respond to an incident.

Oblique imagery is also the source of the 3-D building imagery of the Tyson's Corner and Reston Herndon areas that is displayed in the Virtual Fairfax web application (the buildings sit on top of the orthoimagery from the state). The 3-D imagery is essential in meeting a board mandated requirement for 3-D visualization.

2G70-004-000 Planimetric Data Acquisition Project - GIS

Project Description

Planimetric and topographic data in conjunction with orthophotography serve as the foundational data sets for GIS data of the county. Planimetric data is planar data (2D) derived from observable natural and man-made features visible on aerial imagery, making up many of the key GIS layers used in most of the maps created in the county. These key datasets are used in all county web applications that incorporate maps, and in nearly all of the county's public safety vehicles through the maps included in the CAD/911 system. Since the original data map was developed in 1997 the county has grown considerably, adding new housing, commercial locations, new and modified roads, storm water management features, and other man-made features. Additionally the topography has changed with new development. The updated program leveraged the 2007 and 2009 aerial imagery acquired in partnership with the State. While the entire county was successfully updated using 2009 imagery, this project will continue the update cycle using 2013 imagery.

Project Goal

The goal of the GIS Planimetric Data Acquisition Program is to update approximately 25% of the county's planimetric and topographic data annually. Data sets include impervious features such as roads, pools, basketball courts and driveways; they also include a capture of 2' contours - a substantial improvement in the accuracy of the elevation data and building elevations. This program is dependent on the availability of current aerial imagery in order to acquire the latest changes on the ground.

Progress to Date

Currently 100% of the planimetric data is based on 2009 imagery. In FY 2016, the project will update planimetric data identified by county stakeholders, based on 2013 aerial imagery. Each year the objective is to complete ¼ of the county.

Project Budget

This project is jointly funded by DPWES and DIT. FY 2016 funding of \$90,000 is recommended in Fund 100-C10040 for continued support of the planimetric data update project.

Return on Investment

Planimetric, DTM, and contour data is extremely valuable in a wide range of county operations. DPWES/Stormwater uses planimetric data in carrying out mandated stormwater responsibilities. The Department of Public Safety Communication, Police Department, Fire and Rescue Department and Sheriff use planimetric data in their daily operations. In addition to the public safety usage, there are hundreds of planimetric data users (both direct and indirect) in a variety of county agencies that rely on this data for handling environmental compliance assessments, conducting as-built plan reviews, determining right of way, evaluating development impact on county sewers, locating sensitive environmental areas, assisting in public hearing presentations and task force meetings, assisting with real estate assessment, planning assistance for land development customers, documenting criminal events, and evaluating chemical runoff for hazmat situations. These as well as many other county operations depend on Planimetric data and would be adversely affected if this important data asset is not kept as current as possible.

2G70-011-000 Automated Board Meeting Records Project

Project Description

This project will implement a solution that automates Board package creation and management processes on-line. This initiative is sponsored by the Board of Supervisors and the County Executive and will enable the County Executive's office and the Clerk to the Board's Office for a seamless process to electronically create the agenda and supporting documentation, record Board of Supervisor meeting

matters, and post documents on-line for public and county staff accessibility.

Progress to Date

Components of a solution commonly used in governments supporting meeting agenda development and live meetings recordation that support this project have been deployed in the Department of Cable Communications and Consumer Services for

easier search of meeting videos and agendas from the WEB. Requirements for incorporating the Board of Supervisors' meeting videos with the agendas to create a robust easily accessible and searchable on-line record were developed.

Project Budget

No additional funding is provided in this project in FY 2016. This project is also supported in the e-Gov project.

Return on Investment

This initiative is expected to increase the efficiency of producing the board package including

streamlining the process by providing the information and supporting materials on-line; improve the experience of Board members in reviewing meeting materials with a click instead of thumbing through large binders; improve productivity of the Clerk's office and agencies' preparation and submission of agenda items; reduce manual processes and production of paper agenda packages and reduce space requirements for maintaining paper copies of documents for Board offices and the Clerk's Office.

2G70-019-000 Public Access Technologies - Interactive Voice Response Project

Project Description

The Interactive Voice Response (IVR) technology program develops custom interactive telephone applications that can access and update data in a variety of county databases, in addition to providing static information in a timely, convenient manner. For those citizens who do not have access to the Internet, the project was established at the request of the Board of Supervisors "to enable the county's customers to conduct business with the county wherever and whenever it is convenient for the customer". IVR is one of the foundation programs for enhancing public access to government information and business transactions.

Project Goals

The primary goal is to continue the application of text-to-speech technology for certain applications aligned with e-government goals. Interactive Voice Response enhancements include the continued integration of Web and IVR via XML technology for public use. Plans for FY 2015 - 2016 is to update the IVR solution and on-going implementation of IVR transactions.

Progress to Date

The DIT IVR system currently answers more than a million calls annually. The system is available approximately 24 hours a day to interact with citizens, providing an additional option for conducting business with the county after regular business hours. By handling the more routine calls, the IVR allows staff to concentrate on those calls that most need personal attention. It also allows access to a great deal of information after hours or on weekends. The IVR team developed and

distributed a Request for Proposal (RFP) for a new Interactive Voice Response system in FY 2014, currently (FY 2015) vendor responses are under review at the county attorney's office. The following county agencies are primary users of the IVR system:

County Executive, Office of	County Services Information Line
	Medical Registry – Special Needs
	OPA Survey Line (Seasonal)
Courts	Courts Information Line
	Traffic or Criminal Violation Prepayment
	Juror Information
Fairfax-Falls Church Community Services Board	Community Service Board Survey
Family Services	Coordinated Services Planning Survey
	Register for Institute For Early Learning
Health Department	Health Department Information Line
Housing and Community Development	Inquire Affordable Housing Waiting List
Human Resources	County Job Line
Information Technology	IT Service Desk Information Line
Library, Fairfax County Public	Library Information Line
Police Department	Victims of Crime Information Line

Public Works and Environmental Services	Building Plan Review Information Line
	Inquire Building Permit/Plan/Inspection Status
	Schedule/Cancel Building Inspection Requests
	Schedule/Cancel Special Collections (Trash Pickup)
Tax Administration	Real Estate Information & Tax Payment

Project Budget

The program requires on-going support from e-Gov and telecommunications staff to support and expand the IVR application capabilities in additional business areas, and implement enhancements. No new funding provided in FY 2016.

2G70-020-000 Internet/Intranet Initiatives Project - e-Government

Project Description

This project supports initiatives that improve public accessibility to government information and services. A comprehensive approach is employed to ensure efficient infrastructure capable of supporting multiple business solutions. In addition to enhancing customer service for availability anywhere, anytime, public access technologies reduce staff involvement in providing basic information and transactions, thereby allowing personnel to perform more complex tasks and respond to requests for more detailed or specialized information. Internet/intranet initiatives provide significant and wide-ranging opportunities to use technology as a means of making information more readily available to the public. Initiatives include research and development of emerging technologies, expansion of Web applications, improvements in search and navigation, integration with internal systems and other public access channels, and sustaining infrastructure.

Project Goals

The project's vision is to provide new information and services on all platforms, while continuing to build on existing information architecture. The planned functionality will be delivered in support of the county's taxonomy of information and services, using a single supporting infrastructure. The solution is based upon a single content repository for all platform and agencies. The repository enables various features of content management to provide accurate and reliable

Return on Investment

Public access technologies such as the IVR expand citizen access to county information and services and minimize staff resources needed to provide basic information, and allow staff deployment to more complex and specialized tasks. The Public Access Technologies continue to provide a single information architecture and supporting infrastructure for all platforms to deliver new information and e-services to the public. It expands the capabilities of the content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project also improves search capability for citizens and constituents, and enables the county to build applications quicker and more efficiently by maintaining reusable components.

information, provides additional search capabilities on the public web site, and enables information sharing. The project includes implementing standards and processes for information engineering so that the same application and data is used county-wide in the development of Web content and applications.

Progress to Date

The County's Public Web site has been an extraordinary success and has received national recognition. The site receives approximately 19,252,748 visitors, which equates to about 67,540,899 page views for FY 2014. Approximately 55 county agencies have a presence on the site. The functionality of the site has expanded significantly with the addition of an online discussion tool (Ask Fairfax!) to enable citizen interaction with government on various topics, mobile version of the county website with mobile and iPhone applications to list a few. The county website is also being translated into 12 languages using machine translation powered by Google. In order to empower public services and affirm county's strategic vision and goals, the website has been enhanced with new and updated interactive features and online applications. In an effort to improve website accessibility, all pages on the public website are tested for compliance with Section 508 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act by passing through the county's automated compliance checking tool.



In order to continue to empower public access to service while affirming the county's strategic vision, Fairfax County has pioneered the implementation of governmental services through various mobile devices like iPhone/iPad, Android and Blackberry. In enhancing the county's long standing goal that our community should access their government 24/7 without walls, doors or clocks, Fairfax County now places government in the palm of their hands with the introduction of efficient and cost effective mobile apps and services.

Fairfax County Government's mobile app:

- Enable citizens instant connectivity to their government
- Provide the benefit of getting services and information from anywhere at any time by delivering information in a more conveniently accessible platform
- Enhance the adoption of online governmental services by reaching a larger and wider user base

In addition to our mobile website, the public can download the Fairfax County smartphone application on iPhone/iPad, Android and Blackberry for emergency information, news headlines, one-touch calling through our contact directory, GPS maps, social media links, transportation resources and more at <http://www.fairfaxcounty.gov/news/mobile>.

The ongoing strategy includes 'sharing' which has become an integral part of the Web experience. It is referred to as online collaboration, and known as Web 2.0, social networking or social media. Recognizing that social media is an essential business function in today's rapidly changing world and key to improving citizen-to-government networking, Fairfax County offers multiple channels such as Facebook, Twitter, YouTube and Flickr for public engagement with county government on various topics during emergencies and otherwise. It also advances the county goal of creating a culture of engagement, boosts county operations and furthers our business mission with residents. Using social media tools is a proven and acceptable way to enhance government transparency and encourages a two-way dialogue with the public which augments the standard website.

In addition to the use of numerous county-developed cross-agency applications like RSS (Really

Simple Syndication feeds), Ask Fairfax!, e-mail subscriptions to improve citizen-to-government networking, open source tools like Slideshare (presentation sharing), Google maps (event maps) and Ideascale (social voting) have been leveraged. All these are integrated together and come under the umbrella of NewsWire which is the county's one-stop news shop.

The county has about 27 official social media sites/accounts on Facebook, Twitter and YouTube:

Facebook – <http://www.facebook.com/fairfaxcounty>

Twitter – <http://twitter.com/fairfaxcounty>

Youtube – <http://www.youtube.com/user/airfaxcountygov>

1 – Public Web Site, Mobile App, Search and Navigation

Fairfax County's innovative use of technology combined with user-friendly Web site design has streamlined the interaction between citizens and the government to provide them the necessary tools for interaction and participation with County government. To improve citizen service delivery and provide effective e-Government services, the County website continues to be redesigned with improved functionality and accessibility features since its inception in early 2000. These efforts are achieved with various forms of outreach such as focus groups, online surveys and usability tests with constituents. Various Social Media platforms are employed to expand and redefine communication efforts beyond traditional news releases. To continue empowering citizen access to public services, Fairfax County's Mobile App (available on various mobile devices) provides citizens the added convenience and flexibility of interacting with their government on the go from anywhere at any time.

In FY 2011 - FY 2013, acknowledging trends in high adoption rates of mobile devices, Fairfax County increased the value of its e-government efforts with the add-on of mobile apps for all platforms like iPhone/iPad, Android and Blackberry for free downloads. Our attention to stewardship of scarce resources was achieved by complete in-house development and repurposing of existing technologies. Mobile accessibility further enhances citizen's convenience and reaches a wider user community with the ability to access services and information in the palm of their hands.

Fairfax County News Page

Fairfax County Facebook

Fairfax County Twitter

In FY 2014, the county launched a family of new homepages for our primary website at www.fairfaxcounty.gov. The new county homepage uses responsive design to render seamless information across three device types: desktop, tablet and mobile. The refreshed homepage provides a cleaner design and based on years of metrics studies, highlights the key services the public is looking for online along with a pictorial representation of the county activities. To facilitate and improve online service delivery in FY 2014, the county homepage was redesigned so that the most accessed services are featured prominently and easily available on the top in the "Find, Pay, Report" section of the homepage, based on the current website usage and metrics. The search engine was refined in FY 2014 to improve the accuracy and refinement of results and integrate select social media results. As of FY 2014, there has been about 19,430 copies of the official Fairfax County Mobile App downloaded since its launch in June of 2011 with numbers increasing every day. Both the county's website and its mobile version provide residents of Fairfax County with a wealth of information, online services and connectivity with their government, mobile browsing is undeniably on the ascendency – it is expected that more people will be using mobile devices to access the web than traditional laptops and PCs.

In FY 2015, the county started outlining plans to upgrade the current Web content management system and reviewing the current information architecture to identify steps and gather requirements to improve, restructure and re-engineer the county's website. The goal of this initiative is to create a Web presence that is more topic oriented rather than an organization focused site.

In FY 2016, we will focus more on citizen/community engagement, allowing for multiple communication channels for access to county government 24/7 and on the go. As we continue this effort, the county's website and the county's mobile app will be refreshed making it a more visual, intuitive, citizen-centric, and topic driven site. With the continued use of responsive design and adaptive approach, the same design and features will be translated to the mobile platform. We will continue to enhance search functionality and develop more native mobile applications for public consumption.

2 – WEB Farm Infrastructure Architecture and Management

The following Internet/Intranet Infrastructure initiatives are on-going:

- Secured network settings on all 34 servers to minimize risk of intrusion
- Implement a statistical reporting system for both Internet and intranet servers
- Refined the server monitoring system

3 – Interoperability

As a participant in the Government without Boundaries cross-jurisdictional project, Internet Services staff installed ASP.Net and created a Web Service, which generates XML data from a SQL database using a collaborative defined schema. This project allows Fairfax County to share park-related data with other local, state, and federal jurisdictions. The project supports effort that developed standards, methodology and architecture for data exchange that are compliant with the Department of Homeland Security. Fairfax County CAD2CAD Exchange between the 9-1-1 CAD systems of Alexandria, Arlington, and Fairfax was successfully implemented representing both a technology integration success and a long sought-after milestone in the operations of 9-1-1 dispatch. On-going interoperability efforts for county agencies as well as other data exchange requirements are supported in this program.

4 – Intranet/Infoweb

"FairfaxNET", the county's intranet, which is an employee focused enterprise SharePoint portal that provides an intelligent platform to seamlessly connect users, teams and knowledge supporting the ability to leverage relevant information across business processes to help employees work more efficiently. FairfaxNET is a centralized resource for internal county content, forms, policies, news, application, training and other sources of information. It provides collaboration tools for agencies and work groups which are secure, convenient and a standard workspace for employees to work individually or collaboratively. FairfaxNET is a centralized location for disseminating pertinent countywide, agency-specific or team/project-specific information. It also provides a venue for automating business processes.

Approximately 55 county agencies now have a presence on the county's intranet site (both InfoWeb and FairfaxNET), offering more than 11,000 HTML documents, 12,500 PDF documents, and 15,000 images on the internal site. Most agencies have Web content contributors, and Internet Services staff support content creation efforts for those agencies without a dedicated Web presence. The county's intranet will continue to be updated with additional access to enterprise data and interactivity, and expanded to become a viable alternative for full transaction-oriented applications. The addition of new information and increased business functionality is essentially an ongoing project. Based on conversations with a wide range of county managers, it is also expected there will be numerous concurrent application development requests from a dozen or more agencies for core web-enabled applications as the benefits of the technology become more widely recognized. These requests for support are handled on an as-needed basis based on priority, visibility and functionality, and highest Return on Investment.

FairfaxNET is the primary platform for access to internal applications, information and services, employee collaboration and information sharing, and collaboration with other agencies. FairfaxNET is also the gateway to the enterprise ERP solution (FOCUS).

In FY 2015 – FairfaxNET is being upgraded to SharePoint 2013. FY 2016 goals include development of project sites to manage and keep track of projects and implement records management for document storage and archival purposes. We will continue to work with county agencies to automate and streamline business process for operational improvements.

5 – Web Content Management

Web Content Management will address refining the site's information architecture, defining and implementing replicable workflows, as well as designing and implementing the supporting infrastructure for Web content contribution.

2G70-041-000 Customer Relationship Management (CRM) Project

Project Description

Customer Relationship Management (CRM) is a foundational technology that supports the County's strategic goal of improving the quality and efficiency of responses to citizen requests/issues by integrating current stovepipe applications, implementing on-line 24x7 access strategies, social media tools, and techniques to enhance the overall customer

6 – E-Services

Internet Services prototyped new application development platforms and developed standards and best practices for the current environment. DIT supports other agencies in the development of Web content and applications.

Project Budget

In FY 2016, recommended funding of \$528,000 supports the increasing demand for County's web, e-Government and on-line transactions services as well as improved navigation, web content synchronization, mobile applications, social media integration, transparency, Web 3.0, support of the county's intranet (FairfaxNet) and continued compliance with Department of Justice Americans with Disabilities Acts requirements. This funding will also facilitate implementation of selected recommendations under the "Digital Data Fairfax" section of the "Enhancing Fairfax County's Customer Experience and Engagement Opportunities" report to the Board of Supervisors.

Return on Investment

This project continues to provide single information architecture and supporting infrastructure for all platforms and new information and e-services to the public. It further expands the content management system to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project improves the search capability for citizens and constituents while enabling the county to build applications faster and more efficiently by maintaining reusable components. Public access technologies minimize staff resources necessary for providing basic information, thereby allowing staff deployment to more complex tasks that require detailed or specialized information.

experience and manage service requests via a single user enterprise-wide interface tool.

Project Goal

This project begins a multi-year effort for the the replacement of current legacy CRM solutions with an up-to-date solution that integrates with county agencies' business applications and processes,

consolidating and reducing redundant hardware, software, and maintenance expenses. The enterprise CRM provides for unified tracking and case management of service requests and manages requests via a multi-platform CRM solution across many channels including email, web, social media, and call center capabilities. The improved integration with the County's Web environment, e-mail and communications systems promotes service efficiency and effectiveness and promotes improved customer experience and citizen engagement goals and provides information and data with an enterprise view that enhances opportunities for cross-agency processes and service planning.

Progress to Date

Phase I included environment setup, business process analysis, configuration, application development, and data migration for eleven county business systems including Board Offices and the Office of Public Private Partnerships. Future phases (FY 2016 -2019) will continue planned migration of additional county agencies to the new consolidated CRM platform.

2G70-053-000 Retirement of Legacy Systems Project

Project Description

The FOCUS/ERP project replaced the county's existing legacy mainframe systems for budget, human resources, finance, and procurement. The Retirement of Legacy Systems project supports the conversion and migration of other county agencies' remaining legacy business systems, databases, and data off the mainframe onto more contemporary platforms. This project is the final step in eliminating the old data center infrastructure and operational support model and embrace opportunities for accelerating the on-going consolidation of server and storage environments and 'cloud' type services, which have yielding operational savings and enhanced 'green' IT initiative DIT is pursuing.

Project Goal

This project aims to move several remaining legacy files and data off the mainframe onto more contemporary server based and virtual platforms. New relational data repositories, indexing schemes, analytics and search capabilities are being developed. Upon completion of the data migration

Project Budget

In FY 2016, recommended funding of \$400,000 supports development of an enterprise CRM approach for handling citizens service requests, case management, and issue tracking.

Return on Investment

CRM technology facilitates increased efficiencies and effectiveness in managing the many citizen requests and interactions within and across county agencies and business functions. It allows a constituent-focused operation where government is positioned to be proactive to citizen concerns by enhancing collaboration among all agencies/departments and by providing knowledge of common issues for follow-up. The CRM solution will also improve transparency by allowing citizens and constituents to easily view how the county is managing their request by providing a tracking number. Consolidating intakes, reducing the number of duplicate request, and eliminating redundant systems provides taxpayer savings. This cost savings provide tangible evidence to citizens that their government is working for them efficiently by providing better access to information, optimized issue response/processing, and improved accountability/compliance.

and conversion, the county's mainframe platform can be retired.

Progress to Date

Solution research and assessment was conducted in FY 2012. First phase legacy data in various areas associated with public works' legacy land development system data was converted to a new repository, with search and reporting capability implemented in spring of 2012. On-going data migration and conversion will continue through FY 2015-16. The work accomplished in this project has received industry recognition including from two multi-national corporations.

Project Budget

Additional funding is not required in FY 2016.

Return on Investment

Many efficiencies and cost savings will be achieved with the conversion of old legacy data, which is required and useful information, into a modern data

repository with advanced search and reporting capabilities, as well as with the migration off and eventual retirement of the mainframe system. With retirement of the mainframe system the county will achieve savings by ending associated lease payments for hardware, software licenses and utilities, mainframe data storage devices, as well as

the cost of separate mainframe security software. Furthermore the converted legacy systems can utilize more efficient virtualized server environments thus providing opportunities for additional savings in the county's data center to include environment, data center operations, and utilities.

2G70-069-000 Tax System Modernization Project - Tax/Revenue Administration

Project Description

This project provides the information systems development and technology infrastructure required to redesign the county's tax and revenue systems. The Tax/Revenue project facilitates a simpler process for citizens to fulfill their tax obligations and pay for services by modernizing the internal processes used for assessing, billing, and collecting county taxes and other revenues. In FY 2010, the county completed the replacement of the legacy real estate mainframe system with a COTS product called Integrated Assessment System (IASWorld). This project provides for the replacement of the two remaining core tax systems, Personal Property and Business Professional and Occupational Licensing with a web based application. Implementation of this new product will allow for a comprehensive overhaul of many existing functions such as personal property account administration, business filing and licensing, vehicle registration, tax assessment, exemptions and adjustments, accounts receivable, and billing. Elimination of outdated technology platforms will enhance opportunities for integration with other county and State systems, as well as, facilitate citizen interaction and self-service opportunities via web based technologies.

Project Goals

The legacy mainframe platform for the Personal Property system and BPOL limits integration with other County and State systems, limits reporting, as well as constrains citizen interaction and self-service opportunities via web based technologies. In addition to the technology constraints, in-house and contract programmer expertise to support the legacy applications is increasingly difficult to obtain and rapidly becoming more expensive. As a result, both tax applications can no longer support efficient assessment, valuation and collection activities. System enhancements and modifications, many of which are required by changes in State and County code, cannot be made economically and require lengthy development periods. Integration with Virginia State Department of Motor Vehicles and Department of Tax Administration

applications which are critical for assessment, taxation, and enforcement purposes, cannot be automated due to limitations within Personal Property and Business Professional and Occupational Licensing systems.

Progress to Date

Milestones (Projected)

- Application assessment – July 2013
- Oracle database conversion – January 2014
- Web application development – June 2014
- User acceptable testing – July 2014
- Production Implementation – January 2015
- Incorporation of multiple business process improvements including web, mobile apps, electronic billing for all tax types, enhanced web portal, staffy field mobile apps, and seamless integration with state, county and third party systems will continue in FY 2016- FY 2017.

Project Budget

Funding of \$450,000 is recommended for FY 2016.

Return on Investment

This project eliminates risks to County revenue generated from the assessment and collection of Personal Property and BPOL taxes. Modern technology platforms will enable the Department of Tax Administration to enhance customer access and improve services to citizens and the business community and enhance the security and use of web technologies for self service functions increasingly used by the community to interact with County systems. This project will also provide for automated integration with other County and State systems directly impacting the County's revenue collection activities, and contribute to retirement of the legacy mainframe environment in the data center.

IT-00001 Fairfax County Uniformed System (FOCUS) Project IT-00016 Budget Solutions Project



Project Description

Fairfax County government and Fairfax County Public Schools embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support finance, human resources, budget, procurement, and related administrative applications with an integrated approach that has the flexibility to meet current and future requirements. A Steering Committee and project team comprised of county and school personnel was formed in 2006 for program governance. The Government Financial Officers Association (GFOA) provided assistance to the project, advice on best practices and opportunities of ERP systems, and assisted in the preparation and review of the procurement process.

Project Description Goal

Goals for the initiative were to replace the obsolete legacy systems with a contemporary suite of integrated applications; be able to take advantage of new functionality and enabling practices; provide the opportunity for multi-faceted data aggregation; integrate with e-government initiatives and capabilities; promote telework; and aid in the transformation, transparency and standardization of financial and human resource processes and information. This initiative is designed to foster an environment for change and leverage modern system functionality over time.

Progress to Date

The software procurement was completed in the summer of 2009 with the purchase of SAP software. The project began implementation activities in summer, 2010; the financial management and procurement system (Phase 1A) went live in November 2011. Project Phase 1B (enhanced supplier management functionality) was completed in FY 2013, and Phase 2 (county human capital management) went live June 2012 for the first payroll run in FY 2013. In addition, a new financial transparency application went live in FY 2014. As part of the transparency initiative, research was conducted by county and schools staff on best web-based practices for reporting integrity, common sense usability standards, and open-government goals. Work on Phase 3 items, include a budget solution for both county and schools commenced in FY 2015. These efforts include the development of a robust data warehouse, providing the

ability for end-users to run ad-hoc reports for financial, procurement, budget and human capital management data. A consolidated expert business group of the core business agencies and a core expert technical center in DIT manage the system and on-going efforts to leverage system opportunities. The county will continue to focus resources on maintaining and improving staff skills and abilities, including performance of many of the technical programming and system tasks, configuration, and business process redesign efforts. The county's on-going efforts will ultimately result in less reliance on contractors for an overall better operational cost outcome. In many ERP environments, organizations have had to solely rely on expensive outside consultant contracts for system operations and maintenance.

The system is available for use 24x7, which is a substantial improvement over the legacy platform. In addition, improvements have been seen in business operations, such as the time to produce W-2s. Disaster recovery (DR) for the system has been implemented that provides for near real-time availability from a third party off-site facility, a significant improvement over the legacy DR processes whereby system recovery would be achieved over several days. This high availability 'DR' solution is being leveraged for other systems in the county's DIT Data Center.

In FY 2014, a post-implementation review of the system for next stages opportunities of refinements and leveraging functional and technical capabilities was conducted. The information and recommendations from this review have been prioritized and used to develop a long-term strategy for system maintenance and enhancements.

Based on input from IT research advisors, this initiative was a bold achievement that included a unique county government and school system combined with a complex ERP implementation on a short schedule. Other municipalities continue to seek information from Fairfax County on this approach and lessons learned.

Project Budget

Project funding was aligned with the phases of this multi-year project. At this time, funding remains for Phase 3 initiatives and ongoing maintenance of the system. In order to allow for administrative oversight of the new budget solution, funding was reallocated from IT-000001 to IT-000016 in FY 2015. No new funding is required in FY 2016.

Return on Investment

Due to the successful implementation, the risk that antiquated and disjointed systems pose for system failure and inferior data has been mitigated. The implementation of the Employee Self Service Portal (ESS), Manager Self Service Portal (MSS), and enhanced supplier relationship management functionality provides 24 hour transaction access. Also, with role-based access, system

controls and security are enhanced. Benefits include real-time system replication to meet modern standards required by external auditors for controls and financial management. Long-term opportunities remain in gaining operational improvements and transparency goals for many years to come, to include the areas of budget projections and publication, reporting, performance management initiatives.

IT-00006 Office of Elections Technology Project

Project Description

This project funds a technology update/refresh of voting and elections equipment used by the Fairfax County Office of Elections. The current voting system in the county is a hybrid system consisting of an optical scan unit combined with two or more accessible direct recording electronic voting machines (DREs), and has reached the end of life. Additionally, this project will ensure the county meets federal and state elections mandates.

Project Goals

This project will support replacement of voting/elections equipment in Fairfax County.

Progress to Date

The schedule included procurement of the first portion of the equipment for the non-presidential elections in FY 2015 and FY 2016; the remainder to be purchased for the 2016 presidential election (FY 2017).

Project Budget

Additional funding is not included in FY 2016.

Return on Investment

This project will ensure the county's compliance with Federal and State elections mandates. The new system will be required by Federal law (Help America Vote Act of 2002) to contain an electronic solution that allows access for disabled voters, as well as those for whom English is not their primary language, to vote without assistance by another. Additionally, under state law changes in 2007, the new system cannot include any new direct record electronic (touchscreen) equipment. As a result, the industry is currently moving towards solutions that have an electronic screen on which a voter makes their choices. Then a "marking device" will produce a paper ballot from the choices made on the electronic screen that will then be fed into an optical scan machine to be counted.



IT-00007 Enterprise Project Management

Project Description

The Enterprise Project Management initiative addresses a need for a more structured enterprise approach to project management for County projects. The project provides for dashboards and other tracking mechanisms to ensure more effective and streamlined project management processes across County departments.

Project Goals

The goal is to standardize project management solutions to support various business areas across multiple departments. In the event, that specialized software is required in specialized business areas, these solutions are expected to be integrated into the Enterprise Project Management tool. This project will also leverage and expand existing SharePoint licenses.

Progress to Date

Business process analysis, requirements and market research will be complete in FY 2015. Work in FY 2016 will include selection, design, development, testing and implementation of the first phase of a project management solution.

Project Budget

Additional funding is not required in FY 2016.

Return on Investment

Project management tools provide the county with the ability to enhance management of large complex enterprise wide projects from start to finish. These tools enhance and improve project planning and organization, scheduling and resource management, cost control and budget management, collaboration, communication, decision-making, quality management and documentation. In addition, project management tools improve project resource management – physical, financial and otherwise, to meet overall project objectives.

IT-00017 Enterprise Document Imaging Project

Project Description

This project provides for the multi-phase implementation of a contemporary enterprise document management platform and its utilization in support of county business functions. A contemporary Enterprise Document Management platform will support on-going county agencies' efforts for imaging documents and integration with case-management systems and/or agencies operations, and provide for a more cost effective means of compliance with mandated document retention requirements. The Document imaging system will be implemented in web format such as Digital Media, 'cloud' architectures, mobile apps, and wireless 'smart' devices, as well as platforms that support cross agencies and enterprise class solutions. Current Document Imaging systems at the county will be upgraded to latest versions and newer technology.

Project Goals

Implementation of a contemporary Enterprise Document Management platform designed to address the ongoing evolution of technology and its utilization in support of the business functions within the county. Enterprise Document Imaging systems continue to be refined to provide efficiencies and enhanced capabilities to support various agencies/divisions in the county. This project supports the strategic goals of reducing paper records, promotes efficient archival and retrieval of documents, and facilitates electronic workflow process improvement initiatives in county agencies.

Project Budget

FY 2016 funding of \$450,000 is recommended for this project.

Return on Investment

Enterprise Document Imaging systems will enable the county to have a rich document management and business process flow for retrieval and storage of vast quantity of required paper records. The new platform will automate workflows, improve business process efficiencies and productivity, reduce paper records and storage needs, and make data more accessible, easily retrievable, secure and compliant with records management regulations such as the Freedom of Information Act (FOIA). Implementation of a more current document management solution will enable on-line search of digital documents that will provide significant improvement in efficiency for county agencies using data as an integral part of daily operations. It also allows more effective use of advanced analytics for decision making, resulting in service improvements for Fairfax county residents. In addition to fast and reliable business processes, the document management solution minimizes the need for storage of paper records, reduces storage space needs and protection against mounting storage costs.

3.4 Technology Infrastructure

2G70-018-000 Enterprise IT Architecture and Support Project

Project Description

This project supports the strategic infrastructure and expert services required for complex multi-phase enterprise-wide business transformation of IT systems for county general services, enterprise technology, security and infrastructure, and corporate systems including the county's ERP and related business systems.

Project Goals

The main goal is to realize optimal system performance and infrastructure environment efficiencies, and support system enhancement and open-government initiatives. This includes various product platforms, security, middle-ware, document management, and the web services for seamless performance between Fairfax County Government agencies, and Fairfax County Public Schools environments. Additionally, the project provides for on-going transformation support activities, on-going development of business intelligence and reporting model repositories, system performance, system engineering, security access technology and knowledge transfer. The funding supports projected system integration and configuration services and includes various product platforms, security, portal and web services enabling seamless system integration.

Progress to Date

A modern system landscape and server environment was implemented for development, testing, training, conversion and full production systems needs

supporting the SAP ERP solution, portals, security and third party bolt-on products for overlapping project phases. On-going infrastructure and specialized expert support services will continue in FY 2015 and FY 2016 to support Phase 3 project requirements, reporting, IVV recommendations, and scheduled enhancements and technical system refresh.

Project Budget

Funding of \$1,800,000 is recommended in FY 2016 to continue support for strategic infrastructure and services necessary for continued work on business application and infrastructure processes.

Return on Investment

This initiative continues to support the County's on-going technology modernization program in line with the IT investment priorities that provide for a stable and secure IT architecture while leveraging IT investments. This program allows the system to be available on a 24 x 7 basis instead of business-day only use, which extends the ability of agencies to perform work with an improved window for planning and executing system maintenance activities with 20% fewer resources. On-going support for modernization of county systems empowers both employees and managers to execute processes more efficiently, and support functions that improve overall system performance and availability.

2G70-026-000 Fairfax Radio System Consolidation Project

Project Description

Currently the County has two 800 MHz radio systems, the Public Safety and the Public Service systems. The Public Safety Radio system was recently upgraded to the new P25 digital/IP technology. The current Public Service system is over 13 years old with proprietary technology developed in the 1990's and based on the older circuit-switched analog technology, which, now, is obsolete, results in increased maintenance costs, and does not have sufficient call processing capacity to meet current end user airtime requirements. This project provides a cost effective approach to upgrade the Public Service Radio system, which provides two-way radio communications for all County non-public safety agencies, as well as, the

Fairfax County Public School Transportation Department (school buses), Connector, FASTRAN, and Fairfax County Water Authority – approximately 3200 uses.

As a result of a careful and thorough analysis and examination of the new Public Safety Radio System P25 digital/IP technology capabilities, Fairfax County plans to implement a consolidated Public Safety and Public Service Radio system, which will be called the Fairfax Radio System. The County has determined that the new Public Safety "core" system can handle both radio systems without degradation to either system, and will not only significantly reduce the County's recurring radio systems expenses, but also improve both systems reliability

and capability. The new digital/IP technology will extend the Public Service radios useful life so that it can meet the current and future demands of its local government fleet. Additionally, this project will implement a redundant offsite core providing an automated and seamless backup not only for the Public Safety system, but for the first time, creating a backup for the Public Service system.

Project Goals

Consolidating the Public Service Radio System with the Public Safety Radio System will substantially reduce the need for major system upgrades or replacements and correspondingly reduce the County's future financial obligations. New P25 technology systems are now comprised of commercial off-the-shelf (COTS) server based technology, which permits hardware and software upgrades over the life of the system rather than complete "forklift" conversions when the need arises to implement technology changes and/or increase system capabilities. Through annual maintenance enhancements the cost of system upgrades and replacements will be spread evenly across the system's life, thus substantially reducing funding uncertainties.

The consolidated system will increase the processing capacity of the current Public Service system by 50% without adding new, hard to acquire RF frequencies and, as mentioned above, reduce the out-year cost associated with a "fork-lift" system replacement. The new consolidated system will provide the protection and safety for bus drivers and other staff that depend on reliable communications; aligns the Public Safety and Public Service Radio Systems to provide enhanced backup capability; improves customer service to County citizens and other County agencies; reduces reliance on commercial networks; and also provides for future County cost avoidance. The system will be fully compatible with the new mobile and portable subscriber radios used by the County's Public Safety fleet, allowing direct

communication between public safety and public service users for incident or disaster management.

Progress to Date

DIT, in conjunction with the vendor, Fairfax County Schools, and Public Safety users have developed a draft project charter, a draft technology consolidation plan that utilizes the new Public Safety System's Master Site/ Core Network to meet the requirements for the new system, and identified funding requirements for FY2016-2018. This project now aligns the two systems and reduces the overall cost for the Public Service Radio System upgrade. This plan will be updated over the coming months, finalizing implementation efforts to be in-line with the funding anticipated for the FY 2016-18 Budgets

Project Budget

No additional funding is required in FY 2016.

Return on Investment

The consolidated system will increase the processing capacity of the current Public Service system by 50% and reduce the out-year cost associated with a "fork-lift" system replacement in the future. The new consolidated system will provide continuing protection and safety for our first responders, bus drivers, and other staff that depend on reliable communications; aligns the Public Safety and Public Service Radio Systems onto one advanced technology; provides enhanced backup capability for both Public Safety and Public Service; improves customer service to County citizens and other County agencies; and importantly provides future County cost avoidance. Additionally, the system will be fully compatible with the new mobile and portable subscriber radios used by the County's Public Safety users, allowing direct communication between public safety and public service users for incident or disaster management.

2G70-036-000 Remote Access Project

Project Description

This project supports enhanced and expanded capability of authorized county users to securely access the County's systems from remote locations for field service activities, telework, Continuity of Operations Plans (COOP), and emergency events such as pandemic outbreaks or natural and weather emergencies.

Project Goals

This project established an enterprise-wide standardized remote access control methodology and architecture that provides a solution for employees and external system users, partners and County customers to authenticate their identity in order to gain access to systems and relevant data to conduct work securely. All user authentication management is based on policy and centrally managed allowing for comprehensive audit and reporting services.

This project supports increased security, simplified management, secure access from remote locations, and mobility.

Progress to Date

Through this project, over 4,000+ users can access county systems as authorized, with over 3,000+ being able to access simultaneously. Project activity is on-going in order to support, enhance and expand enterprise wide remote access, which supports county Telework and Continuity of Operations (COOP) goals.

Project Budget

Funding of \$100,000 in FY 2016 is recommended to continue support for remote access capabilities.

2G70-052-000 IT Security - Social Media Project

Project Description

This project provides the security technology infrastructure requirements for secure social media access from the county's network in a protected way. Secure access addresses the growing demand from county agencies for access and use of social media capabilities in their interactions with the public.

Project Goals

The goal is to support increased security for County networks and systems resulting from the growing demand to use social media in business operations and to enhance customer service.

Progress to Date

Implementation of next generation firewall and upgrades to the software to facilitate protected social media access began in FY 2014 was completed in FY 2015. County social media sites including Facebook,

Return on Investment

This project provides a cost effective approach to enhance the county's infrastructure in order to provide flexibility for a variety of remote access devices that may be used by county staff. The capability encourages more employees to take advantage of telecommuting in line with regional goals supported by the Board of Supervisors and also provides county staff necessary remote access capabilities in case of emergency events such as snow storms, hurricanes or possible pandemic outbreaks.

Twitter and YouTube are now accessible from the county network. The county's [Information Technology Security Policy](#) was updated to reflect this new access. This project will be retired in FY 2016.

Project Budget

Additional FY 2016 funding is not required

Return on Investment

Information Technology Security supports secure access to new web-based social media functionalities required by county agencies in their business operations and to enhance customer service. This project implements protected web security gateway infrastructure to expand web and social media access and to fulfill a mandate from the County Executive and the e-Gov. Steering Committee to meet the security requirements.

IT-00005 Government Risk and Compliance (GRC) Auditing Project

Project Description

The Governance, Risk and Compliance (GRC) Auditing Project provides for implementation of the SAP GRC system security user access monitoring and policy compliance solution. GRC will automate security monitoring and provide real time visibility of system access controls for the county's new FOCUS system via a dashboard. GRC will be used by the county's

Department of Finance, FOCUS Group, Internal Auditor, DIT IT Security Office, and in supporting the annual financial audit controls review process.

Project Goals

The goal of this project is to automate security monitoring and provide real time visibility of system access controls for the county's new FOCUS system via a dashboard.

The GRC auditing system is an enterprise solution supporting required policy activities of Internal Audit, the Department of Finance, the Information Security Office and senior management. The county's financial auditors have recommended this tool in connection with the preparation of the county's annual Comprehensive Annual Financial Report (CAFR).

Progress to Date

Multiple GRC modules are required to fully automate security monitoring and real time visibility of system access controls for the county's new FOCUS system via a dashboard. To date GRC Access Risk Analysis (ARA) has been installed in pre-production and production environments, which allows for generating Separation of Duty (SOD) reports on SAP standard and customized transactions/authorization objects. This feature enables the analysis of a new role development and/or any role changes to be reviewed and mitigated before moving beyond the development systems. The SOD reports are reviewed by business owners and remediation/mitigation

implemented as required. Currently, 96.5% of the SOD's identified have been mitigated and/or remediated. Additional GRC modules are planned for FY 2015 - 2016.

Project Budget

No new funding is required in FY 2016.

Return on Investment

The GRC auditing solution will help the county reduce the cost and effort needed to proactively prevent risk events and compliance violations. GRC software provides the county real-time insight into its risk position, and embeds risk and compliance programs into the county's strategy, planning, and operational execution. The potential benefits include reduced unauthorized access risk with centralized monitoring and management, improved visibility across risk initiatives, reduced impact and duration of risk events, decreased cost and effort of compliance, risk, and audit programs covering SAP financial, procurement, treasury, human resources and payroll systems.

NEW Identity Management System Project

Project Description

This project supports implementation of a single centralized consolidated identify management solution across enterprise county IT systems, that will replace and merge the existing SAP and enterprise Identity Management (IDM) systems with a single solution that provides a more robust, agile, and flexible tool to integrate across all county IT systems.

Project Goals

In order to meet security, management, and compliance demands, the new system will allow central authentication and bringing all user accounts into a single common directory for the County's IT enterprise. The planned solution will integrate with Governance Risk and Controls (GRC) security reporting product to allow for stronger security and monitoring of user accounts, and access control for the county's information systems. The new system will result in reduced manual account management and processing, increase automation, reduce time on -boarding and off-boarding county users / employees

and integrate with all SAP and Non-SAP systems for unified and centralized authentication across the county's IT enterprise.

Project Budget

Funding of \$800,000 is recommended for FY 2016.

Return on Investment

Replacing the existing Identity Management solution with a consolidated system will reduce staff time spent on manual processing of user accounts, thereby reducing Total Cost of Ownership for IT; by enabling staff to define access policies; and also lock down sensitive data such as files, folders and shared folders. The new IDM system will enhance IT security and restrict access to the county's sensitive information, ensuring that unstructured data is only accessible to approved users. Additionally county staff can better evaluate usage patterns, read and write access to help staff determine and assign the appropriate owner of data for all future access requests.

3.5 Human Services

2G70-008-000 Document Management and Imaging Project - Department of Family Services (DFS)

Project Description

This is a multi-year, multi-phased project that supports the transition within the Department of Family Services (DFS) from manual to automated processes for filing, storage and access to records using document management platform technology. Phases focus on specific divisions of the agency with the goal of providing an agency-wide document management solution built on the County standard platform. Phase I implementation for the Self Sufficiency Division was completed by the end of fiscal year 2010. Phase II implementation for the Children Youth and Families division was completed by the end of fiscal year 2013.

Project Goals

This project provides a reliable and secure system to catalog, archive and retrieve sensitive Family Services documents for case management and to improve response times for client inquiries of case records. In addition, the project allows for the management, retention and destruction of DFS records in accordance with State and Federal mandates, and avoids non-compliance issues associated with the degradation, damage, or loss of paper files.

Progress to Date

This is a multi-phased project, where phases will be delivered in modular components aligned with the readiness of the necessary infrastructure. By implementing smaller phases, disruption to business operations is minimized. In FY 2005 and FY 2006, Infrastructure components were developed to support the delivery of the initial component for Family Self Sufficiency (FSS). Functional requirements and a prototype design were completed in FY 2007. In FY 2007, requirements definition began for the integration of the Commonwealth's SPIDER system and for the replacement of a data feed to a key financial system. In FY 2008 system design and initial development/configuration tasks were completed. Since Phase I implementation in FY 2010, the Family Self Sufficiency document management system stores over 70,000 client case files containing over 26 million documents.

In FY 2010, Phase II requirements definition began for the Children, Youth, and Families (CYF) division. In FY 2013 system design and development as well as

testing efforts were completed and a phased training and system implementation commenced. Training and implementation was completed at the end of FY 2013 to over 300 Children, Youth, & Families Division staff. Since implementation began in fall 2012, over 2,000 electronic family and child cases have been created containing over 30,000 documents. Phase II was completed by the end of FY 2013.

While Phase II for the Children Youth and Families (CYF) Division focused on implementing base document management functionality required for system use, Phase III will focus on building upon the solid foundation implemented in Phase II. It is a natural course after system implementation and usage that end users begin to identify ways in which the product can be improved. The CYF division will enhance the system to improve end user experience. Phase III will also focus on incorporating automated workflows as well as include usage needs of other internal CYF partners within DFS such as Title IV-E eligibility and the Comprehensive Services Act (CSA). This will provide for streamlined processes and gaining greater efficiencies which ultimately improve performance quality and service delivery.

Project Budget

Additional funding is not included as part of the FY 2016.

Return on Investment

This project provides a reliable and secure system to catalog, archive and retrieve sensitive Family Services documents for case management, improved response time for client inquiries of case records, and enhanced management, retention and destruction of DFS records in accordance with State and Federal mandates. The project also prevents non-compliance issues associated with the degradation, damage, or loss of paper files, more effective and efficient use of staff time, and reduced error rates. Additional benefits include improved case and document security; streamlined field work; enhanced opportunities for telework; and reduced space requirements and risks associated with maintaining and routing paper copies of documents.

2G70-009-000 Document Management and Imaging Project - Office for Children (OFC)

Project Description

This multi-phased document management project continues the structured enterprise approach of imaging and workflow capabilities in the Department of Family Services' Office for Children's (OFC). In Phase I, the project transitioned Community Education and Provider Services, the Child Care Assistance and Referral program, and School Age Child Care program (SACC Registration) to document imaging technology. Head Start maintains files for over 350 children and families in multiple locations. With this technology, field staff and federal auditors will have the ability to review files electronically without traveling to multiple locations.

The School-Age Child Care Program provides direct services to over 13,000 children in 138 centers throughout the county. Files are maintained on all staff, children and centers. The transition to an electronic system will ensure that county residents receive the most efficient, highest quality service and that all legal mandates are satisfied regarding record archival and county residents and client privacy.

Project Goals

This project provides for a structured enterprise approach to the development of imaging and workflow capabilities in agencies that have identified an opportunity to provide increased security and integrity of their records; reduce the labor intensive record retrieval and re-filing process; expedite workflow processes through an electronic workflow management system; provide simultaneous and instant access to records; and reduce costs associated with space and shelving for storage of paper requirements.

Progress to Date

Community Education and Providers Services, Child Care Assistance and Referral program and SACC Registration are currently in production. Phase II of the project will work on integrating the Head Start, School Age Child Care program and the Director's office with OFC's Electronic Records Management System. Work on Phase II of the project is pending replacement of the enterprise document management platform.

Project Budget

Additional funding is not required FY 2016.

Return on investment

This project supports reduction in the use of paper and provides for more efficient and less costly storage of files for the agency and the County Archives. Imaging and workflow projects increase the security of records, protect sensitive information from unauthorized access; reduce staff time required for retrieval and re filing of documents; reduce processing time as workflow efforts streamline the reviews required; provide a viable, accurate documents management system for old and one-of-a-kind documents; promote telework; reduce error rates by reducing manual data entry; and decrease the space requirements for maintaining paper copies of documents.

2G70-027-000 Community Services Board (CSB) Initiatives Project

Project Description

SYNAPS was developed for the Fairfax-Falls Church Community Services Board (CSB) to improve client tracking, client/third-party billing, enhance client demographic information, staff productivity data, and provide for compliance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996. The replacement of SYNAPS was recommended by the Beeman Commission which was established in 2008 to advise the Board of Supervisors on the future direction and design of the mental health services delivery system. On March 1, 2012,

SYNAPS was replaced with implementation of the new Electronic Health Record (EHR) system that is hosted by the software provider on their solution environment.

This project supports on-going efforts as determined by the CSB.

This also supports the CSB - HIPAA Database Consolidation project and provides support for the design and development of a secure, scalable and easy to use Community Services Board (CSB) HIPAA data repository to store current and future HIPAA related information.

Project Goals

The CSB- HIPAA Database Consolidation project will ensure CSB's compliance with federally mandated HIPAA regulations designed to protect the privacy and confidentiality of individually identifiable health information. The design will include appropriate role based security and scalability to enable multiple departments to store HIPAA - related information on a consolidated and secure platform.

As CSB requirements evolve through a variety of statutory and e-PHI requirements, other enhancements will be planned.

Progress to Date

SYNAPS was replaced with Credible in 2012. Requirements and design for the CSB HIPAA Database

Consolidation and other core business requirements is under review with stakeholders.

Project Budget

Additional funding is not required in FY 2016.

Return on Investment

The CSB HIPAA Data Consolidation data repository will provide a more secure and scalable solution to enable multiple departments to store HIPAA - related information on a consolidated and secure platform. The new repository will provide enhanced search capabilities that will improve the efficiency and speed with which sensitive HIPAA information may be retrieved and reported.

2G70-037-000 Child Care Technology Project - Office for Children (OFC)

Project Description

The Child Care Management System for the Office for Children (OFC) in the Department of Family Services (DFS) determines client eligibility, tracks child enrollments, and processes approximately \$1.5 million per month in provider payments for the Child Care Assistance Program and Referral Program. This application processes over 2,500 home child care facility permits for Community Education and Provider Services and connects families with child care providers participating in the Child Care Resource and Referral System. The application tracks current market rates for child care providers and interfaces with the county's financial management system.

The current OFCIS software was acquired in 1999 and has been upgraded several times to remain operational. Assessments of this aging system revealed that it is past its projected useful life cycle and no longer fully met the agency's needs, reporting and compliance requirements or modern technology standards.

Project Goals

Provide a new child care system that provides a seamless integration of services with the Virginia Department of Social Services' (VDSS) automated child care system and with the Virginia Child Care Resource and Referral Network (VACCRRN) and:

- Align reporting strategy with county and state data.
- Reduce redundant data entry.
- Improve operational effectiveness and productivity.
- Enhance web self-service for the child care community.
- Bring OFC technology in compliance with county standards and requirements.

Progress to Date

An RFP was developed to include a comprehensive set of requirements that satisfied state and local need for a new solution that can also achieve client access and interoperability. The RFP process resulted in an award to a local firm. Following project kickoff and requirements documentation, project work will continue through FY 2015- 2016.

Project Budget

The project is supported by FY 2011 Third Quarter transfer of \$2 million and FY 2012 third quarter transfer of \$2.5 million from Office for Children operating funds that will augment remaining project balances for complete implementation of the Child Care Management System. FY 2016 funding was not requested.

Return on Investment

Modernization of the child care system will ensure a stable application to support the business functions of the Office for Children. Efficiencies will be gained in seamless integration of processes for VDSS and VACCRRN, allowing

for faster processing of applications and child care permits. Moving to a modern platform that incorporates web technology will create an environment where data and information is more assessable from remote locations.



2G70-055-000 Volunteer Management System Project

Project Description

This project will provide an integral approach for recruiting, scheduling, and managing volunteers on a daily basis as well as produce reports by operational unit. Aggregate reports across county agencies will also enable more accurate tracking and reporting of volunteer contributions to the citizens of Fairfax County. This system will also support integration with legacy volunteer software products used by county agencies and partners (some of which may be converted later).

Project Goals

The primary goal for this project is to better manage over 100 programs spread across multiple facilities within Fairfax County and facilitates enterprise growth of volunteer programs with a single software solution that improves

recruitment, management, placement, and scheduling. Another goal is to better track the contributions of volunteer activities and provide a shared point of entry for citizens interested in volunteering with Fairfax County. Project objectives include developing common policies and data elements for the county's volunteer programs and streamlining the process of matching volunteer abilities, interests and availability with county agency needs.

Progress to Date

Milestones

- Contract kickoff and project preparation – completed spring 2012
- Gap analysis, detailed project planning and design - completed summer 2012

- Implementation of the Health Department MRC volunteer program to include the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) program – completed winter 2013
- First Phase of the Electoral Board volunteer program to recruit new volunteers for the June 2013 Election – completed spring 2013
- Implementation of the full Enterprise module as well as the following agencies: CERT, Health Department, Library, Non-Election Day Volunteers (Part of Elections), VITA, and Office for Women and Domestic and Sexual Violence Services – completed Fall 2014.
- Implementation of additional county agencies and external organizations – continues through 2016.

Project Budget

FY 2016 funding was not requested.

3G70-077-000 Human Services Data Repository Project

Project Description

The Human Services Data Repository Project will use existing county tools and infrastructure to implement a data repository that enables Human Services staff and others such as Public Safety personnel to determine if one or more clients are being served anywhere in the Human Services system. Following successful implementation of a pilot, future phases include adding more Human Services applications to the repository and expanding the data fields collected to create a portal for Human Services staff that will provide an unduplicated count of clients in the Human Services system.

Project Goals

The goal is to better equip the county to provide services to clients from any point of encounter, whether from within the Human Services system or from within the Public Safety system. Improved access to client data can potentially make a significant difference in a life-threatening situation.

Progress to Date

The Human Services IT Governance Board (HSITGB) will establish strategic direction, policy and priorities for technology initiatives and investments across the

Return on Investment

With over 1 million county citizens and with growing county budget constraints, volunteers are an important component in the sustainability of county programs and services. In 2008, over 12,000 volunteers provided approximately 500,000 hours of volunteer service. At an average rate of \$20/hour, this effort resulted in an approximate value of \$10M in services provided and cost avoidance by the county. An Enterprise Volunteer Management System will help to expand the culture of engagement by providing centralized volunteering opportunities and facilitating the tracking and reporting of volunteer activities. This will result in additional services provided to citizens and increased cost avoidance by the county as the program expands enterprise-wide. Additionally, capturing data about volunteer employers allows agencies to apply for corporate grants that are increasingly influenced by employee volunteer contributions.

Human Service agencies. This group is conducting research and providing guidance related to the data repository project. The project plans to continue with documenting requirements, identifying a preliminary set of demographic data elements, a subset of which will be used in the pilot, and developing scalable technical models to work across multiple Human Services departments.

Project Budget

In FY 2015 this project was funded via a reallocation of \$400,000 from the DFS Data Reporting project (2G70-051-000). Additional FY 2016 funding is not required.

Return on Investment

This project provides the Human Services agencies with enhanced program planning, more efficient delivery of services and increased service coordination through the ability to perform trend and demographic analysis of shared data across the Human Services system. Additional non-quantifiable benefits are realized through avoidance of service interruption to clients who may be most at risk of harm, potentially providing life-saving services by providing critical data about clients being served anywhere in the Human Services system. Benefits

also include a reduction in staff time required to search through multiple information systems to determine if a client is in the Human Services system, as well as staff hours saved entering and re-entering

client demographic data that has already been recorded in another Human Services information system.

IT-00008 Child Welfare Integration Project

Project Description

The Child Welfare Integration System project will provide a single source for case management and alleviate the time social workers spend updating multiple disparate state and local data systems as they work to serve children and families. Considerable time is lost to direct client services as social workers comply with manual processes and update redundant data in silo systems to fulfill both state and local program reporting. The lack of integration between the various systems results in the inability to demonstrate client specific and program-wide progress and does not support data driven decision making. Child welfare clients often exist in complex and unpredictable situations. As such, social workers need a view of all factors influencing children and families which allows them to assess the challenges and to develop comprehensive plans aimed at successful and sustainable outcomes.

Project Goals

The goal of this project is the development of a single solution for child welfare case management which provides a holistic view of case information, incorporates rules and assessment tools, business workflows, and provides for operational and compliance reports supporting effective service delivery.

Progress to Date

Requirements Analysis continues through FY 2016 with subsequent phases and implementation planned for FY 2017.

Project Budget

No new funding is required in FY 2016. This project received \$500,000 during the FY 2014 Carryover process.

Return of Investment (ROI)

The Child Welfare Integration System project will eliminate the duplication and redundancy involved with updating multiple stand-alone systems by providing a single secure portal for data recording activities, thus allowing social workers to do their job more effectively. The time savings gained can be applied toward guiding clients towards successful and sustainable outcomes. Savings are also anticipated with relation to measuring and understanding the impact of program efforts on participants through improved reporting capabilities to track efforts, outcomes, and participant progress. This system consolidation effort is expected to reduce the amount of IT support required to maintain the multitude of systems currently in place.

IT-00009 Participant Registration System Project

Project Description

This project will provide the Department of Neighborhood and Community Services (NCS) a consolidated electronic system to register and track participants at community, neighborhood, senior and teen centers. Currently, participants who visit multiple centers complete a separate paper registration form for each center. Additionally, the NCS centers use different methods to track and count participants, to include manual counting of paper sign-in sheets and small ad-hoc databases.

As part of the new system, participants will be issued identification cards with identification codes that they will scan upon entrance at any NCS Center. Participant data will be updated annually or as their information changes. The new system will enable staff to verify program/center eligibility and track participant attendance at both the center and the individual activities offered at the center, and provide for better and more accurate data reporting and enhanced protection of confidential participant data.

Project Goals

The primary goal of this project is to support implementation of one centralized, web based, participant registration and tracking system to be used at all NCS centers.

Progress to Date

- Phase I includes refining functional requirements, RFP development, solicitation, evaluation, vendor/solution selection - FY 2016.
- Phase II will include configuration, testing and implementation - FY 2017 - 2018.

Project Budget

FY 2016 funding is not required.

Return on Investment

The primary focus of this new initiative is improved customer service, significantly enhanced efficiency and accuracy of data reporting, and improved data protection and security. Response from the community indicates tremendous acceptance of an ID card system for entrance into NCS centers. This project will significantly reduce the current burdensome paper registration process and will substantially ease the burden on the participants since each participant has to register only once to be eligible to use any NCS center. The system will also interface with existing financial systems in order to manage program and related fees. NCS will be able to use the data recorded in the system to meet state and local reporting requirements, assist in program development, and enhance results-based strategic planning within the agency. It is anticipated that revenue collection processes will be enhanced through the use of the proposed system.

NEW County-wide Telepsychiatry Project

Project Description

The Telepsychiatry Expansion project supports the Fairfax-Falls Church Community Services Board (CSB) initiative to expand the delivery of specialty and general psychiatry services to Fairfax County areas that do not currently have reasonable access to services. To meet the needs of these residents, CSB's Telepsychiatry project will expand the use of mobile televideo units to eliminate the rigidity of where clients are seen and increase efficiency by using other non-local psychiatrists.

Project Goals

Enhancement of existing CSB Telepsychiatry services, a component of telemedicine services using interactive audio, video, or other electronic media to provide diagnosis, consultation, or treatment. This project focuses on establishing the availability of static and mobile telepresence or teleconferencing systems for providing psychiatric services to underserved population of youth and adult clients and to make services available to additional sites and more clients.

Project Budget

FY 2016 funding of \$300,000 is recommended for this project.

Return on Investment

In addition to improved delivery of mental health service to the entire community, telepsychiatry also results in reduced travel time for clients and CSB psychiatrists, increase efficiencies in provision of access to specialty psychiatric providers such as child and adolescent and psychiatrists who speak other languages especially Spanish; provide the ability to conduct unscheduled/emergent psychiatric evaluations 24 hours per day; enable delivery of enhanced psychiatric support for community partners; increase psychiatric evaluations from emergency departments in local hospitals, as well as hospital pre screenings, and pre-discharge psychiatric appointments.

3.6 Planning and Development

2G70-040-000 Facility Maintenance Management System Project

Project Description

This project supports the acquisition of an Integrated Facilities and Grounds Management System as a single, integrated facilities information resource for the Facility Management Department (FMD) and the Fairfax County Park Authority (FCPA). An updated system will increase the effectiveness and efficiency of staff and utilization of capital resources required to maintain and manage county and park facilities and properties. The new system will support the goals of the project through the enhancement of data collection methods and tools, improved warranty tracking, elimination of redundant facilities information databases, user friendly interfaces for internal and customer access, and a strong reporting system.

Project Goals

The goals of this project are to acquire and implement a Computer Integrated Facilities Management (CIFM) System. FMD and FCPA hold the greatest portion of responsibility for the maintenance of county's largest and most valuable physical assets: its properties, facilities and the subsystems that keep them operational. The maintenance aspect must be fully integrated with the management of those assets by encompassing all the functional components and activities that support Lease Management, Space Management and scheduling, Inventory Control, Grounds Management, Contracts Managements, Utilities Management, Physical Security, and Emergency Preparedness/Disaster Recovery.

Implementing a web based, "one stop shop" for facilities information, will enable internal improvement and efficiencies as well as provide more accurate, completed, and timely information to customer agencies. By consolidating the redundant facilities tables and databases maintained by various branches within FMD as well as by the participating "partner" agencies, the county will gain the benefit of more consistent data and improved interagency coordination of information.

Multiple county agencies currently use functionalities of the CIFM system to ensure county facilities, parks, grounds, sidewalks, curbs, trails and parking lots

comply with requirements of the American with Disabilities Act (ADA). The Department of Administration for Human Services (DAHS) will be added as a system user in order to track facilities related work to manage and maintain 232 residential units, 100+ leased sites as well as the various shelters under their direct supervision.

Progress to Date

Work completed:

- Portfolio and Demand Maintenance module - implemented March 2007
- Planned Maintenance and Space Management modules - completed June 2009
- Real Estate Leases module - completed August 2009
- Capital Project module - completed Spring 2010
- In FY 2015-2016 the project will work to upgrade the software platform and application as well as provide newer servers to host the application. Implementation of the wireless application, if approved, will be the last phase of this project.

Project Budget

New funding is not required in FY 2016.

Return on Investment

Extensive savings will be realized through the streamlining of communications and processes throughout FMD and the Park Authority, the most quantifiable savings derived from time saved by field personnel (crafts, trades, and grounds personnel) and Work Control Center staff within the agencies. The replacement system will provide wireless technology to greatly improve the speed and consistency of data collection necessary to better utilize field staff and the elimination of excessive hand recording of information that is entered into the system at a later time and/or by a different individual. Accurate and timely data collection plays a vital role in improving time management for field staff and will ultimately work to extend the life cycle of equipment. Improved data collection in the field, along with a web based customer

IT-00010 Electronic Plan Submission and Review Project - Land Development Services (LDS)

Project Description

The Land Use Information Advisory Council appointed by the Board of Supervisors (BOS) issued several guiding principles that included more robust use of technology facilitate the electronic submission and review of land use applications. The Land Development Services division of the Department of Public Works and Environmental Services (DPWES) plans implementation of an electronic plan submission and review to enable architects, engineers and construction professionals to submit changes online by marking up or editing drawings 24 hours a day, 7 days a week, anywhere in the world. The electronic process enables constant communication where clients are able to collaborate with one another for real time editing. Users are also able to track their progress and organize their plans in an inexpensive manner. The ease of use of electronic plan review makes the transition from paper base to digital plan review extremely valuable.

Project Goals

This project will build upon a pilot conducted in FY 2014 to introduce the capability to receive and review building and site plans electronically. It will yield numerous benefits, including enhanced customer service, reduced carbon footprint, cost savings, cost avoidance, and satisfaction of Board-appointed committee recommendations.

Progress to Date

This multiphase project builds directly on the prior investment made for an e-Plan pilot project in CY2014. Following successful completion of the pilot, this initiative will continue with adding various plan types, other customers and reviewers until fully deployed.

Additional phases will be evaluated and added as the project progresses from FY 2016 to FY 2020 until it is fully deployed.

Project Budget

FY 2016 funding is not requested for this project.

Return on Investment

In addition to streamlined review and plan submission processes, this project provides significant environmental benefits and financial savings stemming from reduced paper costs and reduced fuel consumption. Once implemented, this project will eliminate/significantly reduce the need to print large paper plans (each over 50 lbs) and deliver them numerous times for county review. Customer savings and improved customer service combined with a streamlined and more collaborative plan review process advance the county's goal of supporting and enabling further development and redevelopment throughout the county.

Additionally much of the current cost of physical storage (DPWES spends in excess of \$59,000 annually to digitize site plans for historical retention) will be eliminated when the electronic plan submission and review project is fully implemented. Other benefits include simplification of the plan submission and review process, staff efficiency, improved record keeping, streamlined review processes, improved accuracy of data transmitted due to a reduction in the number of times plan data needs to be copied and recopied, industry "goodwill" gained by satisfying a long-standing industry demand, and reduction of costs to retrieve historical plan records with a significant reduction of risk that the documents being sought have been inadvertently lost or destroyed.

IT-00011 ePlans Project - Department of Planning and Zoning (DPZ)

Project Description

The Land Use Information Advisory Council appointed by the Board of Supervisors (BOS) issued several guiding principles that included more robust use of technology to facilitate the electronic submission and review of land use applications. Since that time, the Department of Planning and Zoning (DPZ) has made the initial investment to develop and implement a pilot ePlan system for the zoning application process.

This project supports the complete review process from distribution of the case material to the various County agency reviewers through action by the BOS to include archiving the final case materials, thereby developing a fully automated review process.

Project Goals

This project's goal is complete automation of the review process for rezoning applications. The ePlan system

application has the ability to be customized for use with all zoning application types reviewed by the Zoning Evaluation Division, including Special Exceptions, Special Permits, and Proffer Interpretations and pre-applications submissions. Further, it is anticipated that the ePlan system can be customized for use by other Divisions within DPZ.

Progress to Date

This multiphase project builds directly on the prior investment in DZP for an e-Plan pilot project (in CY2014). Following successful completion of the pilot, this initiative will continue with adding various plan types, other customers and reviewers until fully deployed.

Additional phases will be evaluated and added as the project progresses from FY 2016 to FY 2020 until it is fully deployed.

Project Budget

No new funding is required in FY 2016.

IT-00012 ParkNet Replacement Project

Project Description

This project supports the Park Authority's initiative to replace the legacy ParkNet system with a commercial, off-the-shelf (COTS) application to meet the Park Authority and county requirements. ParkNet, the Fairfax County Park Authority's key management and information business application was implemented in the early 1990's and facilitates all point-of-sale activities, internet class registrations, program and camp registrations, pass holder and class attendee check-in, and maintains critical user information. ParkNet is now technologically outdated and without adequate support from the vendor.

The Park Authority operates nine recreation centers (RECenters) with indoor swimming pools and a variety of fitness/classroom/gymnasium spaces; three lake front parks; 68 picnic facilities, several historic sites that can be reserved; two campgrounds; five nature centers, and several other unique facilities that apply user fees and charges such as general admissions, passes, retail sales, equipment and facility rentals, classes and events. In addition to these sites, recreation programs are also held at

Return on Investment

The incorporation of the ePlan system for application submission and review will enable staff to process applications in a more efficient manner by significantly reducing the administrative aspects of manually entering application information into existing databases and tracking, copying and distributing the wide variety and growing volume of case materials. Staff resources will have the ability to place more emphasis on the technical review of proposals and assist in addressing efficiency issues related to the increased complexity of rezoning applications. The automation of the land use process, analysis, collaboration, distribution and parallel processing of agency comments and markups may yield a considerable reduction in applicant costs and improved staff efficiency. A number of other jurisdictions surrounding Fairfax have implemented aspects of the ePlan system, including Montgomery County and the District of Columbia. Full implementation of this effort will place the county in a position of greater economic development appeal.

non-FCPA locations throughout the county including public schools and private vendor sites.

Project Goals

The project will replace ParkNet, the key management and information system for the Parks. The system no longer meets the present business requirements of the Park Authority, is technologically out-of-date, and out of compliance with current County IT standards (it was implemented before most County standards for applications of its size were established).

Progress to Date

An agency task force documented and compiled requirements for the system. The Park Authority then partnered with Neighborhood and Community Services (NCS) to develop an Request for Proposal (RFP) for the Recreation Management System that addresses the requirements of both agencies. The RFP was issued, responses were received and evaluated with final vendor selection planned for the latter part of FY 2015.

Project Budget

FY 2016 funded was not requested for this project.

Return on Investment

The ParkNet application has become an essential component of providing the County's citizens with the parks and recreation services they expect. With expanded system capability there are opportunities for improved customer satisfaction resulting in enhanced revenue through new application features the agency intends to

implement, such as Electronic Fund Transfer payments for pass sales and online facility reservations. Investments in automating Park applications have resulted in increased revenue collections. Revenue collected and recognized through ParkNet totaled \$44.4M in FY 2013; an increase of more than 188% since ParkNet was implemented in 1995.

NEW Fairfax Inspections Database On-line (FIDO) - Land Development Service (LDS) System Replacement Project

Project Description

This project will replace the county's aging and antiquated land use systems currently used by multiple land use agencies with a reliable consolidated platform using current technologies

Project Goals

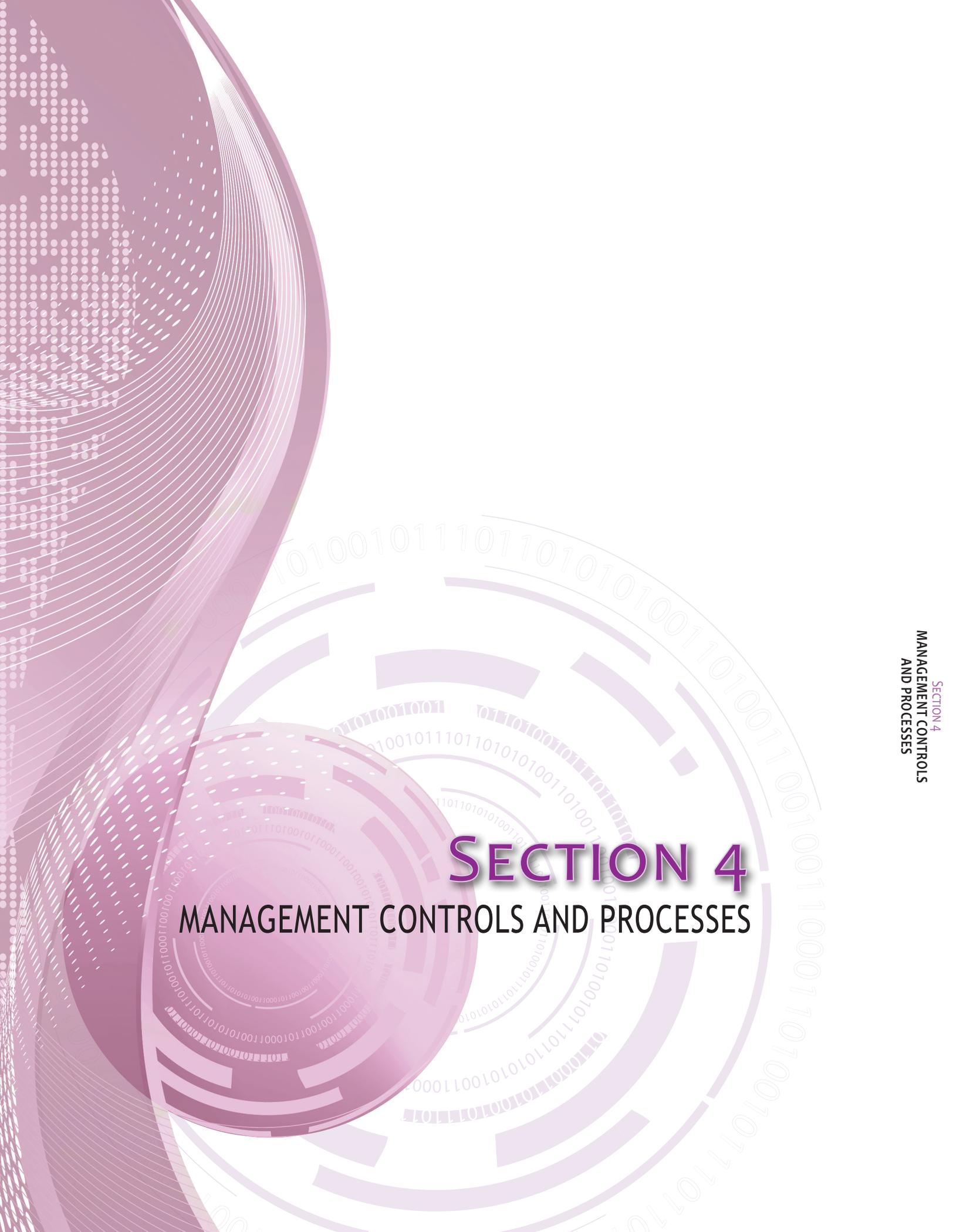
The goal of this multi-phase project is to begin the replacement and consolidation of multiple outdated land use systems that support the county's zoning and development plan review, building permit/license issuance, code enforcement, inspection, and cashing activities. Land Use systems targeted for replacement include the 17 year old Land Development System's (LDS) Plans and Waiver System (PAWS), and Zoning Application System (ZAPS), the 12 year old Fairfax Inspections Database On-line system (FIDO), and several shadow systems that provide e-services, and mobile wireless support for citizens and inspectors, respectively. The legacy systems lack the native agility of modern technologies that provide a flexible enterprise platform for evolving business architecture requirements. The legacy land use systems rely on outdated technologies no longer supported, have security profiles that lack optimal security capacities, and use legacy hardware platforms with corresponding compatibility issues with emerging desktop, tablet and mobile-wireless technologies.

Project Budget

FY 2016 Funding of \$1,000,000 is recommended for this project.

Return on Investment

The project a single enterprise information sharing platform supporting Plans, Permits & Inspections (Currently site plans and inspections are in the PAWS and SI2K systems, building plans and building inspection information are in the FIDO, and SYCLO systems) that will elevate the current risk and unknown cost associated with system failure and recovery. For example, should the FIDO system experience a catastrophic (and unsupported) database failure that may lead to COOP scenarios in several land use agencies. Plan, permit, license, inspections & fee collection activities may be affected, and the County's ability to sustain optimal land use operations may be compromised. Additionally the LDS system is 17 years old, an extended reliance on obsolete technical architecture may affect the County's ability to respond quickly to new state and local ordinance requirements. The FIDO & LDS systems are currently facing challenges in meeting integration requirements with the new e-Plans systems (DPZ, DPWES). Trade-offs between system integrity and new business requirements may be required as both systems continue to age. Extended dependencies on obsolete technologies may also involve additional costs should they become incompatible with emerging desktop (Windows 10) and web (mobile wireless) technologies.



SECTION 4

MANAGEMENT CONTROLS AND PROCESSES

MANAGEMENT CONTROLS AND PROCESSES

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SECTION 4

MANAGEMENT CONTROLS AND PROCESSES

4.1 Information Management Framework

Background

In FY 1994 the Fairfax County Board of Supervisors created a citizen Information Technology Advisory Group (ITAG) to study the use and management of Information Technology (IT) by the county government. The ITAG was composed of eight private sector executives from Fairfax County based companies. Two committees supported the ITAG, one made up of staff from their own corporate organizations and the other comprised of county staff. The work of the ITAG resulted in the creation of the Department of Information Technology (DIT).

Several independent county organizations already involved with application programming, systems infrastructure, data center operations, telecommunications, mapping and technical training were merged to the new IT Department. Centralized resources for system security, architecture and standards, e-government, technology planning and administration were added resulting in a full function centralized county government IT organization. ITAG also recognized that larger county departments would still need to retain some IT staff in addition to utilizing central DIT resources, and that agency business specific projects such as technology based industrial systems or small scale point solutions would be better handled by the agency rather than the central IT agency. DIT assists these agencies with consultation, mentoring, technical project support, infrastructure provisioning, security, licensing, and policy and standards compliance. All departments must adhere to county IT standards, planning and budgeting and continue to follow the direction set by the county to ensure consistency, cost efficiencies and aggregate technology investment value.

ITAG made further recommendations for IT governance and funding, including:

- The county create a Chief Information Officer (CIO) position to oversee DIT and technology countywide.
- The CIO should report directly to the County Executive as a Deputy County Executive level position.
- IT be treated as an investment and given consistent funding annually.
- The CIO be responsible for IT planning countywide and the expenditure of major IT project funds.
- The county create a funding mechanism to ensure IT employees are trained properly and their skills are kept up to date.
- An annual IT plan is written to detail IT direction, projects and project portfolio budgets.

At the time of ITAG recommendation for establishment of a technology modernization fund, it also recommended that the county provide funding of approximately \$20 million per year for investment in technology in order to sustain the Board of Supervisor's goal for service efficiencies and effectiveness at optimal cost. This fund provides money for new technology solutions and services required successful project delivery. The modernization fund represents the county's enterprise wide and key departmental projects, which are closely tied to business process improvement and strategic goals.

Based on the initial ITAG recommendations, the following have been implemented in on-going development and improvements in the county's IT organization, governance, and support structure:

- ✓ Centralization of the major IT functions for the county (FY 1995)
- ✓ Creation of a CIO function (FY 1995)
- ✓ Standardization of technology investments across the county (FY 1995)
- ✓ Annual technology project review incorporated in the countywide budget process (FY 1995)
- ✓ Creation of a technology modernization fund (FY 1996)
- ✓ Established funding for technology training (FY 1996)
- ✓ Project steering committees, formal project reporting and governance framework established. (FY 1996)
- ✓ Creation of a permanent private sector advisory group: Information Technology Policy Advisory Committee (ITPAC) (FY 1998)

- ✓ Established Senior Executive IT Steering Committee (FY 1999)
- ✓ Launch of an internal project management certification program (FY 1999)
- ✓ Established enterprise technology architecture committee (FY 2001)
- ✓ Creation of an IT Investment Portfolio Management position in DIT (FY 2002)
- ✓ Established an enterprise technology architecture function in DIT (FY 2002)
- ✓ Development of strategic planning alignment process (FY 2003)
- ✓ Reorganization of IT Security leadership and development of independent IT Security Office in DIT (FY 2003/2004)
- ✓ Merger of information architecture, web services and document management functions (FY 2004)
- ✓ Establishment of Architectural Review Board in DIT (FY 2005)
- ✓ Reorganization to establish resource capability for regional Homeland Security interoperability requirements (FY 2005)
- ✓ Creation of a position dedicated to integrated Public Safety and Emergency Management strategy (FY 2005)
- ✓ Designated Director of DIT as Chief Technology Officer (FY 2006)
- ✓ Established e-Gov Executive Committee (FY 2007)
- ✓ Established Services-Oriented Architecture Team (FY 2007)
- ✓ Adopted ITIL Framework for Service Support (FY 2007)
- ✓ Established Deputy Director to enhance executive capacity on IT service delivery and operational efficiency, and manage emergency support initiatives (FY 2007)
- ✓ Established Court Technology Office and Governance (Courtroom Technology Governance Board (FY 2007)
- ✓ Established Leadership for National Capital Region Interoperability Initiative (FY 2007)
- ✓ Established Public Safety IT Governance Board, and Public Safety IT Architect (2008)
- ✓ Enhanced Change Management and Configuration Management processes (FY 2008)
- ✓ Updated Systems Development Life Cycle Standards (SDLCS) (FY 2008)
- ✓ Established FOCUS Project (County and Schools) Steering Committee (FY 2008)
- ✓ Developed Technology Strategy Map (FY 2009)
- ✓ Established 'One Web Team'; integration of e-Gov staff with Office of Public Affairs web-content and communications integration functions in adopting new WEB capabilities and Social Media
- ✓ Study of IT positions and resources county-wide (2011)
- ✓ Established best practices SAP Technical Competency Center in DIT to support FOCUS (2012)
- ✓ Established DIT Mobility Center (2012)
- ✓ Enhanced IT Portfolio Management function to an Enterprise Program Management Office (2013)
- ✓ Enhanced and Modernized IT DR and COOP (2013)

Executive Governance

The overall governance structure is described in Section 1 of this Plan. A Deputy County Executive (DCE) is responsible for the overall strategic direction of technology and information initiatives. The Board of Supervisors expanded the role of the DCE since the position was created as CIO in FY 1995. Today, the DCE is responsible for a broad range of information and administrative related departments and initiatives; of these the County Libraries, Department of Cable and Consumer Services and the Office of Public Affairs partner with the Department of Information Technology on public access technology capabilities and the e-government program; HIPAA Compliance, the Environmental Coordinating Committee includes Green IT opportunities and results, and the County-wide COOP Coordinator, as well of several Internal Services agencies.

The Director of the Department of Technology is also the county's Chief Technology Officer (CTO). The CTO

develops strategy, policy and processes for technology county-wide. The CTO creates the agenda for IT and communications technologies, and directs the activities in the Department of Information Technology.

The Senior IT Steering Committee is the county's executive technology oversight body, providing policy, asset and resource authorization and guidance for the County's IT program. This group includes the County Executive, Deputy County Executives, Director of the Department of Information Technology/CTO, and Chief Financial Officer. The committee receives additional input on a variety of issues from the County's Senior Management Team made up of all agency heads. The committee meets routinely to look at specific IT initiatives, opportunities and issues, sets the county's IT strategy based on the Board of Supervisor' direction, and approves the annual IT investment plan which is delivered by the CTO to the ITPAC for its endorsement. The ITPAC (described in Section 1) is a group of technology savvy citizen leaders appointed by the Board of Supervisors to advise the DCE and CTO on strategy, the industry, and best practices. The annual ITPAC agendas provide information about both existing portfolio initiatives as well as planned initiative and opportunities, most of which require IT investment support in either upcoming or future budget planning cycles. ITPAC writes an annual letter to the Board of Supervisors with its recommendations and advice on technology priorities as part of the annual county budget process. Members also advise their respective Board members on IT matters.

The e-Government Steering Committee provides guidance and direction for new capabilities provided via the Web and other public access channels. The DCE is the chair of the committee, which includes the CTO, E-Government Manger, Directors of the Department of Cable Services, Libraries, and the Office of Public Affairs, and is also supported by the County's IT Security Director and the County Attorney. The committee considers the impact of emerging trends such as the public's adoption of social networking and other information mechanisms in forming the county's strategy for enablement of and governance over related e-Government initiatives.

Finally, major projects such as the Public Safety Information Systems project, Courtroom Technology, and FOCUS project, and Humans Services Integrated Services Initiative have governance committees, typically chaired by the sponsoring Deputy County

Executive with membership including the stakeholder business departments and the CTO or DIT management. These boards/committees oversee, provide guidance and resolve related policy issues to their agencies project manager(s) and teams to ensure scope and delivery.

Project Investment Prioritization and Execution

The Senior IT Steering Committee established funding priorities for technology projects. Based on changes in social and economic paradigms, and state mandates that must be fulfilled, the following priorities are adopted as guidelines for project funding decisions:

- Mandated Requirements
- Leveraging of Prior Investments
- Enhancing County Security
- Improving Service Quality and Efficiency
- Ensuring a Current and Supportable Technology Infrastructure

The process is managed by the IT Project Portfolio Office in the Department of Information Technology. For each fiscal planning cycle in alignment with annual budget guidelines, initial project proposals are submitted by County departments as part of the annual budget process. A two-phase approach was implemented to assist in the preparation and evaluation of technology project proposals submitted for funding. Proposals must meet the following requirements:

- Submission of **viable** projects: minimize project requests that may be beneficial to county business conceptually, however lack substantive information in critical project areas such as staffing plans, technical architecture, project deliverables and benefits;
- Proposed project time frames, areas of responsibility and funding accurately reflect county procurement, budget and existing IT project commitments, as well as clearly identify the impact of the project on agency business and technical staff, and agency operations;
- Identify potential savings by using exiting county-owned technologies or by jointly reviewing similar individual project requests to minimize IT software and hardware duplication and leverage existing technology investments;

- Ensure that proposed project schedules are feasible, and/or that ongoing projects are within scope and budget, and are on schedule.

Early in the process, agencies are requested to submit both a business and technical viability analysis for each proposed project. The business analysis, reviewed by staff from the Department of Management and Budget (DMB) and DIT, includes such factors as business objectives; return on investment including cost savings, cost avoidance, enhanced revenue, non-quantifiable service benefits, staff savings and staffing efficiencies; indicators to measure success, estimated costs, business related risks and alternatives to the proposed project.

The technical analysis, reviewed by staff from DIT, includes such factors as proposed system architecture and its compatibility with the county's technical architecture standards, impact on existing systems and infrastructure, data conversion, electronic interface requirements, and staffing requirements for development and maintenance of the solution. DMB and DIT make recommendations for improvement of the proposals. The final proposals are presented in an oral interview setting conducted by DIT and DMB senior management, who make funding recommendations for consideration by the Senior IT Steering Committee. This process is guided by the five information technology priorities established by the Senior IT Steering Committee. The Senior IT Steering Committee reviews the recommendation for inclusion in the County Executive's annual proposed budget. ITPAC provides the County Executive input and recommendations on technology issues for consideration as part of the Advertised Budget input process; the committee also composes an advisory letter to the Board of Supervisors supportive of the strategy and themes contained in the proposed IT project funding package under consideration for inclusion in the county's Adopted Budget.

Funding in the IT modernization budget represents the strategic and enterprise-wide initiatives for the county. If during the project review process a project is identified that is not strategic, does not have enterprise wide benefits or benefits a major department mission but does benefit a small independent function, funding may be accomplished within in requesting agencies' departmental budgets. Departmental projects must follow the established IT standards, methodology and architecture requirement with DIT providing advisory consultation, infrastructure, resources, and/or standards compliance. All technology solutions are required to be brought before the DIT Architecture Review Board

for solution technical review. Formal architecture standards have been developed that provide further guidance to the project managers. All projects must follow the county's standards and project methodology as defined by the CTO in the county's IT standards.

Once projects are approved for funding, a steering committee is created for each project. This committee can vary in size and membership, based on the dollar value and the strategic importance of the project. A project manager is selected from the department sponsoring the project and a technical project manager is assigned from DIT and /or the user agency's technical group if one exists. Project managers are required to prepare Project and Expenditure plans, hold regular project meetings and report progress and issues. Guidance is provided by the IT Portfolio Manager in DIT.

The Business Sponsor's Project Manager (PM) is responsible to manage business requirements, project scope, and transition of the business to the new technology capabilities. DIT assigns a Technical Project Manager (TPM) that works with the business sponsor PM responsible to design and approve the technical solution, help develop the schedule, coordinate implementation activities in DIT, and execute the technical solution. The Technical project manager is involved in the solution selection process and (normally) solution provider contract negotiations. The DIT PMO assists with IT contracts development review, and compliance.

DIT may conduct periodic project reviews to track progress and support conformance to standards. DIT has established the Architectural Review Board to assist agencies in determining viability of solution and compatibility with architectural standards and the county's infrastructure as a part of the competition and acquisition process. This includes participation on Selection Advisory and Technical Advisory panels. Major IT projects with increased risk, higher strategic value, or a material degree of external visibility may receive direct oversight in tracking project performance, contract requirements, and technical guidance from the Project Management Office (PMO) function in DIT. As available, the county may offer an IT Project management training program for business practitioner project managers. Knowledge goals focus on project reporting and administration, contract negotiation and management, technical architecture, business process redesign, task planning and other topics.

Summary:

Project investment prioritization and execution is based on the following elements that work together to create an enterprise wide process and focus for IT in Fairfax County. The process is inclusive of all agencies and ensures that selected IT solutions align with the enterprise strategic goals:

- Executive management
- Private sector and internal county board of directors roles
- Executive IT Steering Committee
- County-wide planning and review of technology investments
- Focus on standards
- Project Steering Committees
- Collaboration between agencies and DIT
- Leverage investments
- Portfolio management
- Architectural Review Board

4.2 Strategic Planning Process

Periodically, DIT assembles a Strategic Planning team of staff across the IT organizational specialties to gather input on value, need, and expectations related to the future provision of information technology solutions and services, and alignment with county-wide business strategy.

This effort complements development of the IT budget, organization evolution to take advantage of technology and societal changes in technology capabilities, the IT Plan and operations of the Department of Information Technology.

The focus of the planning process is to ensure a comprehensive approach to IT across the enterprise, taking into consideration a number of important influences (both internal and external) of relevance to the organization. Influential factors include changing requirements and channels for 'G2G', 'G2B' and 'G2P' interaction, the need for business integration and interoperability for cross-cutting county initiatives, fast adoption of e-government opportunities, industry and economic trends, transparency and similar imperatives, Social Media and industry trends.

- Skilled project management
- Performance management

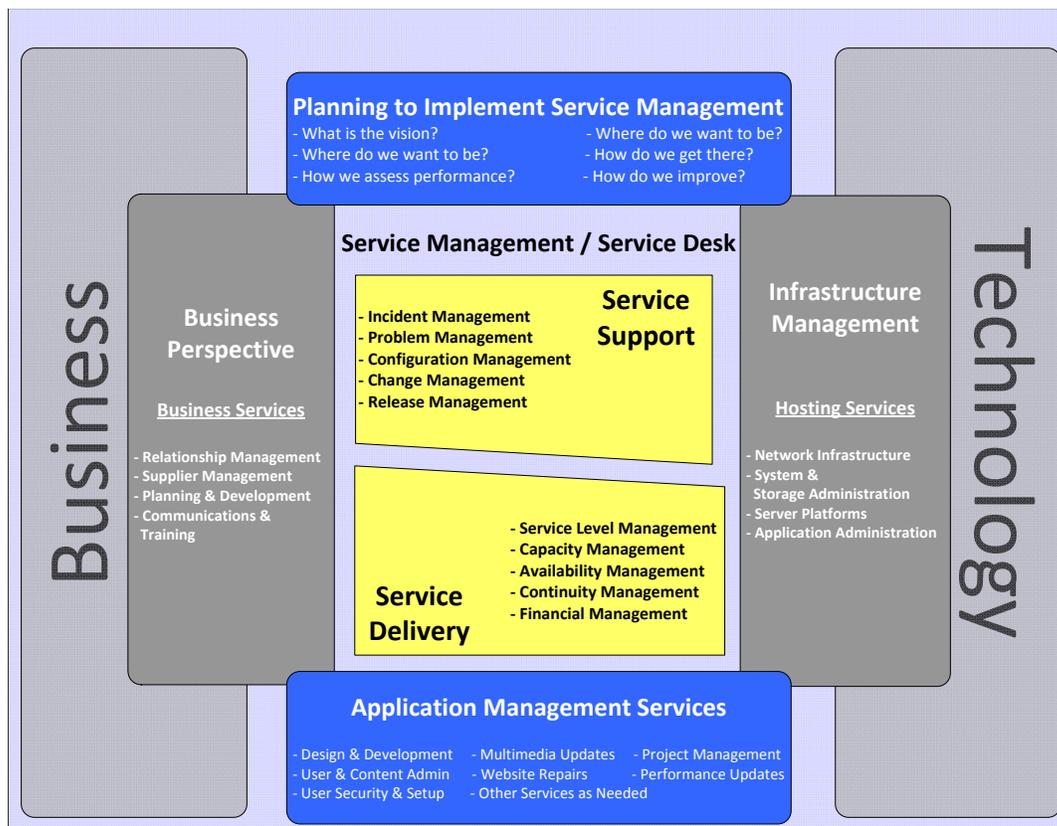
In any organization, a wide range of business processes and practices support all information technology projects directly or indirectly. They are integral to both the development and the delivery of flexible, cost-effective and reliable solutions. The following sections provide a brief description of four of these processes, which have been crucial to the successful implementation of information technology solutions in the county's service environment. These processes are:

- Strategic Planning Process
- Information Technology Architectural Planning and Execution
- System Development Life Cycle Standards (SDLCS)
- Information Technology Project Management Program

Each process is briefly discussed in terms of its origins, its larger operational context, the primary functions performed, principal business benefits achieved and future directions.

The strategic thinking and planning process provides a framework to make decisions around alignment of IT resources to meet the needs of county government. The Strategic Plan provides the county forethought for long term technology commitments and allocation of limited resources to achieve business objectives. This process is necessary to keep and update technology, analyze appropriateness of technology refresh cycles, and the effectiveness and sustainability of technology investments.

Our strategy is based on certain realities: keeping up with the pace of change in technology and using technology effectively to meet government business requirements and public expectations are still the most critical challenges facing information technology providers. Advances in technology enable the workforce to provide better and faster service at a reduced cost, but changes in technology are expensive and complex. New technology must be adopted carefully and integrated wisely into the existing technology infrastructure of an organization in order to maximize the benefits in a cost-effective manner. To give focus and direction to staff within the technology



ITIL and IT Service Management Framework

department and to better plan for the future, a vision statement was adopted by DIT that aligns with the county's vision statement:

"We are a skilled, forward thinking and responsive organization that builds partnerships in the delivery of a strong and innovative technology environment. We pursue and embrace opportunity to creatively enable and strengthen service delivery through Fairfax County."

Values were developed along with strategic goals and initiatives. These values, goals and initiatives, are in the Department of Information Technology Strategic Plan, October 2003. They remain valid today.

Seven major trends impact technology solutions and enrich the county's current technology architecture. These trends maximize IT capability for users and stakeholders while presenting some deployment challenges in the face of IT resource limitations:

1. The workplace is more mobile; therefore, job functions can be performed without being tied to a physical location.

2. Communication, collaboration, and information sharing methods are increasingly automated.
3. Information resources must be managed from a full life cycle perspective.
4. Security for information and communications systems and privacy of information are critical priorities.
5. Technical architectures are facing increased capacity and flexibility demands (includes 'clouds' and new WEB/Social Media capabilities).
6. Citizens require "around the clock" access to information and services, increased transparency, on-line interaction and enhanced engagement with government, through a variety of convenient delivery channels (including new WEB/Social Media).
7. Interoperability requirements drive a need for data standards and open information architecture.

To accomplish DIT's mission and vision, strategic initiatives are categorized within three strategic focus areas to ensure well-defined purpose. The successful adaptation of these strategic initiatives positions DIT to provide an effective

technology infrastructure and efficient customer service support. The overall outcome promotes county agencies working together with partners, maximizes county agency resources to provide diverse government services and optimizes accessibility to county constituents and customers.

Internal DIT **Collaborative Initiatives** are focused around governance structure and processes, technology rollout, interoperability framework, technology portfolio management and marketing. **Customers Service Delivery Initiatives** are designed to improve customer service, improve continually the quality, responsiveness and cohesiveness of products and services delivered. The third

set of initiatives, **Staff Improvement Initiatives**, revolves around resource allocation of personnel and skills ownership and accountability. Efforts are on-going supporting these initiatives and development of measures that will result in improvements and alignment DIT and County-wide business goals and continuous improvement mode. The process of refreshing the strategic plan, score card, and dashboard is on-going. Key considerations include the strategic direction of the county agencies served, and how agencies' strategies drive core county-wide IT infrastructure and operations plans, the development of IT resources, and with a view toward lowest practicable cost at highest performance reliability in the overall cost of IT delivery.

4.3 Architectural Planning and Execution

DIT is faced with the constant challenge of staying nimble while aligning the county's information technology strategy with the agencies' evolving business requirements. The IT provider imperative is that solutions must be delivered on time and within budget. Rapid changes in business requirements can also overwhelm the capabilities of the IT infrastructure. Disparate decisions and infrastructure investments can easily create an overly complex, ridged and/or fragile computing environment that is intolerant of change. Given the rapid pace of today's business innovation, no agency can afford to be locked into an environment that is inflexible and cannot scale. One of DIT's key goals, well aligned with industry-wide best practices, is to develop operational agility. In that effort, the modern IT function has to lower the cost of future changes while optimizing the total cost of ownership for each solution.

IT Architectural Planning creates an adaptive architecture that "engineers out" inhibitors of change, while "engineering in" a high tolerance for the unanticipated. It also provides for transition to next generation capabilities which may be internal or external sources and capabilities. Specifically, an IT Architectural Plan maximizes the effectiveness of IT, while minimizing the risk associated with IT execution. DIT's architectural planning sets a clear direction for the future development of information technology in Fairfax County. IT Architecture introduces a set of architectural best practices to guide IT in the process of designing a flexible technical infrastructure, which frees the organization to provide an IT environment that meets business requirements.

Execution of the IT Architecture Strategic Plan insures the following benefits:

- Better alignment of IT assets with business goals to create a shared enterprise-wide vision

- Supercharging the infrastructure with leading-edge technologies and 'on-demand' capacity
- Developing a consistent framework for future technology decisions
- Making viable IT investments and optimizing IT funding processes
- Resolving emerging business problems while leveraging the existing technology investments
- Reducing unnecessary database, hardware and application software redundancy, thereby providing the potential to reduce the cost of IT (DIT recognizes that some redundancy is necessary and beneficial to promote availability, reliability, and recovery of systems)
- Promoting data sharing between agencies and across IT platforms; improving interoperability and the potential for agency resource sharing
- Harnessing 'Big Data'
- Promoting anywhere/anytime access
- Balanced approach, not trend for trend's sake

The **Architecture Review Board (ARB)** was established In FY 2005 in DIT to provide oversight of all county architecture and infrastructure standards, policies, directions, to address IT architecture issues countywide, to propose IT architectural goals, standards and guidelines for consideration in implementing IT projects and initiatives throughout the county. The responsibilities of the **ARB** include application development architecture, infrastructure and information architectures, security architecture, emerging technology, process and data modeling, integration and interoperability

methodologies, technical standards, and System Development Life Cycle Standards (SDLC) compliance. ARB's role is extremely important and valuable given the need to leverage solution platforms and processes across the enterprise and provide scalability, repeatable processes, and seamless interoperability for achieving cross agency business initiatives and countywide goals.

In addition to assessing conformance of proposed solutions, the committees' review process provides an opportunity to emphasize the need for interoperability of systems and processes that cross agency or functional lines.

The ARB also works with county departments to ensure participation and inclusion in decisions that affect the annual IT planning process. Responsibilities of the Committee include:

- Provide information technology architectural leadership to Fairfax County Government in supporting the on-going development of a strong, flexible, interoperable and secure technology environment.
- Ensure an integrated view between the county's architectural direction and technology initiatives and implementation plans.
- Work closely with county agencies business sponsors, Project Managers, and IT groups to identify IT

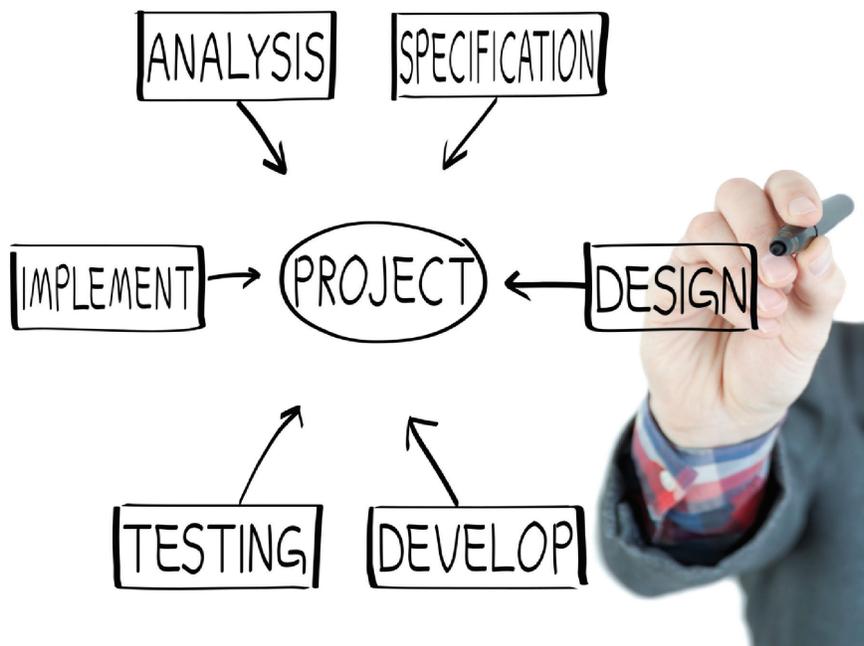
architectural issues related to business needs and IT projects, and propose approaches to address them.

- Propose IT architectural plans and standards to DIT, the DCE and the Senior IT Steering Committee for adoption and countywide implementation.

Agency IT Analysts work directly with DIT divisions on a routine basis in consulting and execution of agency based solutions. DIT has regular monthly meetings with all IT analysts on key subjects contribution to new enterprise-wide solutions and capabilities and strategy such as messaging solutions, MS upgrade paths, DIT-cloud and service catalogue offerings, remote access, bring your own device (BYOD), other infrastructure, and security.

DIT also sponsors several user groups that provide for engagement of agencies in architectural and enterprise wide IT capabilities planning and related issues, awareness, and all-hands efforts. Through a variety of forums, these include:

- ALL IT Analysts forum
- County IT Security Coordinators
- WEB Analysts and Communications
- Agencies GIS Analyst



4.4 System Development Life Cycle Standards (SDLCS)

The county publishes standards for documenting the development and implementation activities for technology applications and systems. The standards include means of conveying information about the planned solutions to allow for development methodology, controls, performance, data integrity, appropriate infrastructure and operational procedures required to place the application into production. The Systems Development Life Cycle Standards (SDLCS) form the basis of making the development of applications a consistent, repeatable process. The SDLCS provides application developers a framework of the important procedures and universal requirements necessary to complete an application. As new technologies emerge and become part of the county's systems portfolio, new application development techniques and application architectures using emerging technologies are assessed. The current SDLC includes new WEB development, wireless application, interoperability, and updated security standards; the process is enhanced for business applications to include reviews for e-government and GIS, and requirements

for Continuity of Operations Planning (COOP) plan and related disaster recovery information which is a requirement for deployment of any new system. As an example, web applications must conform to Section 508 and the American Disability Act (ADA) requirements, which enable the use of assistive technology such as screen readers for the blind. The standards are being enhanced to take advantage of collaboration software, WEB 3.0, open source, 'Cloud', data analytics and beyond technologies that will further enhance citizen to government engagement, decision support, and transparency. 'Cloud' based opportunities such as Software as a Service (SaaS) are also reviewed for feasibility given the county's security standard is provided.

The SDLCS and architecture standards apply to all applications developed for use by Fairfax County Government. All staff, contractors, and solution providers providing, developing and maintaining applications for County Government must comply with the Standards, which are published.

4.5 IT Project Management Training Program

Managing an information technology project to successful completion on time and within budget is extremely challenging. Successful completion of complex initiatives depends on project managers' knowledge and understanding of technical aspects of an IT project as well as having the skills required for managing projects in a dynamic environment. In recent years emphasis has been placed on managing risks, IT security, organizational change management, and business process redesign. The overall objective of the training is to provide IT project managers with a foundation in basic project management concepts, principles, and practices to effectively and efficiently manage IT projects.

Core content areas recommended are:

- ✓ IT Project Management Fundamental
- ✓ Project Leadership and Communication
- ✓ IT Project Plan Development
- ✓ Project Management Tools
- ✓ Solutions Delivery Framework for Information Systems

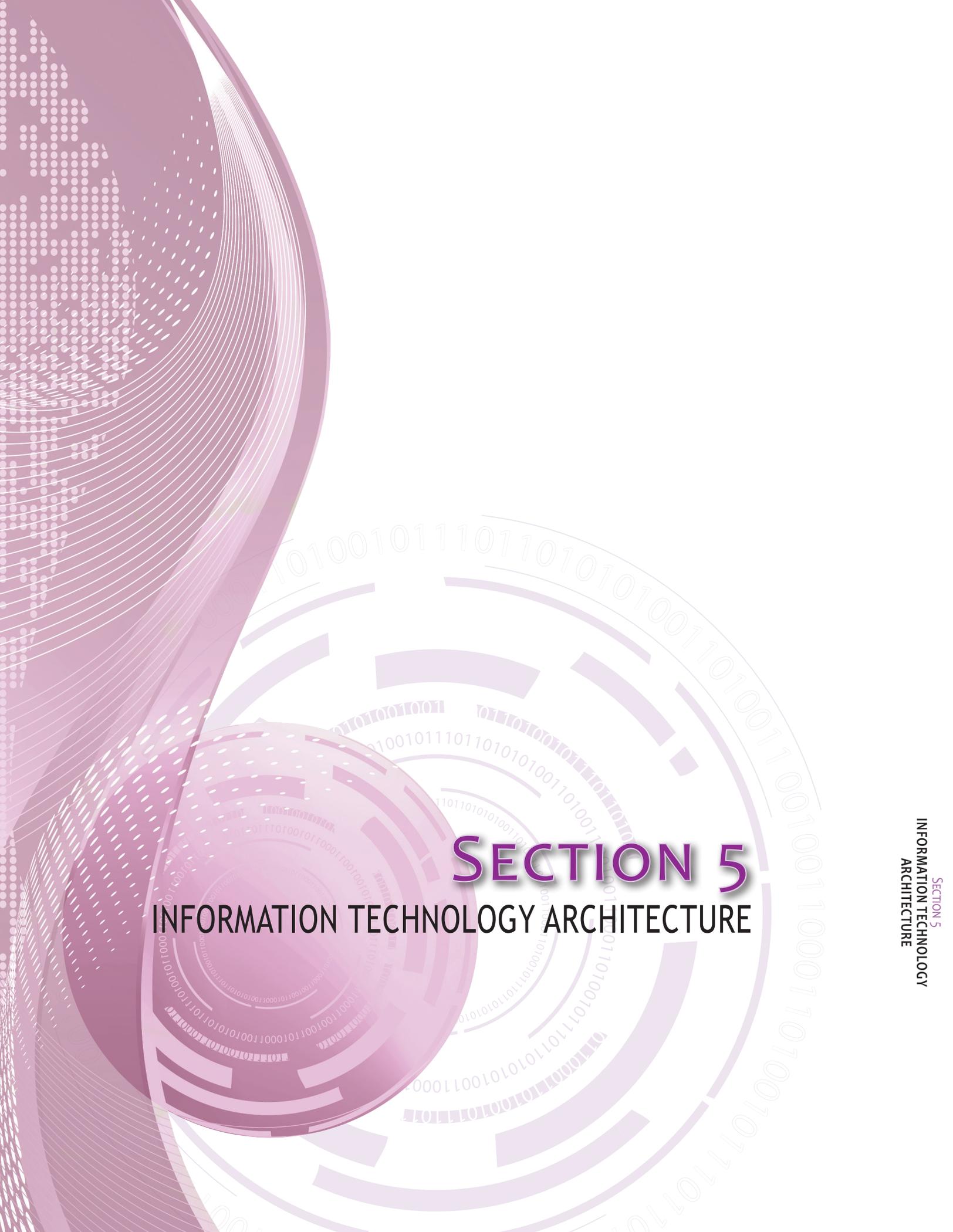
- ✓ Project Budgeting and Cost Management
- ✓ Information Security, Risks and Controls
- ✓ Project Procurement and Contract Management
- ✓ Project Risk Management
- ✓ The Technology Delivery Process
- ✓ Business Process Redesign
- ✓ Information Systems Audit and Control
- ✓ Group Presentation & IT Systems Case Study
- ✓ Best Practices and Lessons Learned

The IT Project Management Training is offered when there are new projects or new staff assigned to manage projects. In June of 2008 Fairfax County's IT Project Management Training program was recognized by the National Association of Counties and received the association's annual Model Program Award which recognizes innovative county government programs designed to modernize and streamline county government and increase services to citizens. In years

where there are no new projects, DIT does not normally run a full curriculum. It will be evaluated and updated as part of the County Executive's new county-wide employee development and comprehensive training program in FY 2015 - FY 2016.

DIT also provides training funds for agency-based IT analysts to maintain skills needed for key technologies.





SECTION 5

INFORMATION TECHNOLOGY ARCHITECTURE

INFORMATION TECHNOLOGY ARCHITECTURE

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SECTION 5

INFORMATION TECHNOLOGY ARCHITECTURE AND INFRASTRUCTURE FOUNDATION

5.1 Enterprise Architecture

This section identifies current information technology architecture elements in Fairfax County. The county's technology architecture is a tactical asset that defines technology components necessary to support business operations and the infrastructure required for implementation of technologies in response to the changing needs of government business and industry evolution. It is a multi-layered architecture that includes:

- Application and Data Architectures
- Platform Architecture
- Network Architecture
- Internet Architecture
- Security Architecture

Enterprise Architecture Process Model

Fairfax County adapted Enterprise Architecture (EA approach) as the blue print or roadmap by which specific technology solutions are developed. Architecture defines the manner in which technology is used to enable flexible business solutions which enable expansion and change as requirements evolve, technology is updated, or becomes obsolete. Architecture as a foundation and roadmap enables the county to establish open standards, assess the impact of new requirements and evolving technologies, and allow for the incorporation of new technologies as

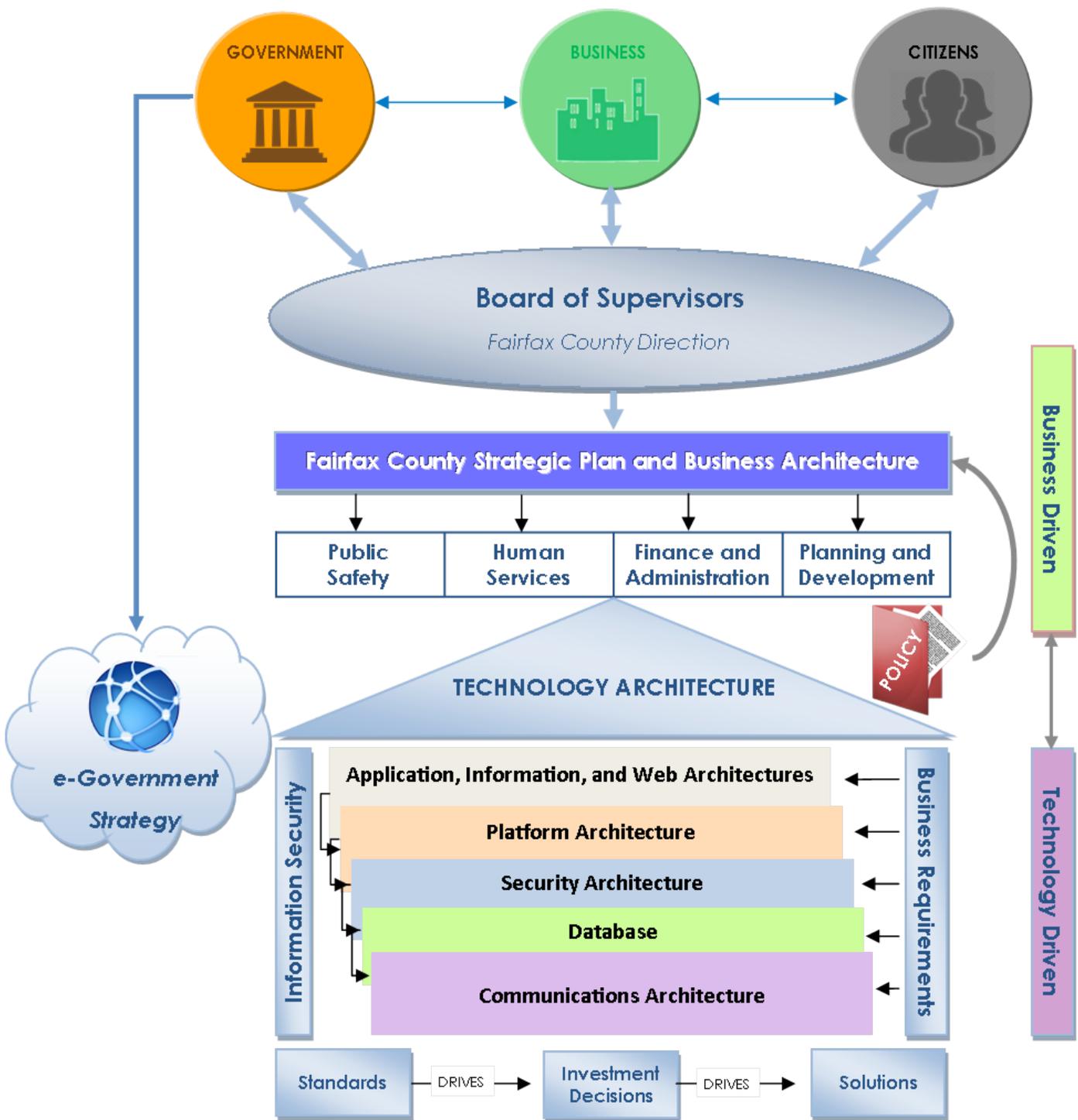
part of an updated blueprint that benefits other solutions. Enterprise Architecture improves the efficiency and effectiveness of technology investments by reducing functional and infrastructure redundancy, leveraging solutions and platforms, optimizing value, and promoting the sharing of knowledge and best practices across county government.

The Enterprise IT Architecture Process Model on the following page illustrates the inter-relationships between the county's IT architecture and business, and the iterative processes involved to ensure the development of an IT enterprise that is efficient, cost-effective, responsive and business driven. For the purposes of the county's model, the businesses have been grouped into four major functional areas as represented in the County's budget: Human Services (HS), Public Safety (PS), Planning and Development (PD), and Finance & Revenue (F&R), inclusive of over 50 departments and agencies representing hundreds of unique and often times cross-agency services.

The model supports the following Mission Statement that directs the county's information technology activities, which remains valid. Every IT effort undertaken is framed and aligned with this mission statement:

"Delivery of quality and innovative information technology solutions for agencies and those doing business with Fairfax County Government."





5.2 Application and Data Architecture

Application architecture defines the design of and correlations among software programs and applications. The Architecture promotes common development and presentation standards, enables optimum system integration, provides opportunities for use of shared infrastructure environments, servers, storage and related tools (infrastructure), enables shared use of data, facilitates the reuse of components, and the rapid deployment of applications in response to changing business requirements. Application Architecture includes elements of technology architecture that converts business process to business intelligence to support the county's goal of delivering timely, efficient and cost effective services. The vast inventory of enterprise-wide and agency specific applications reside on open systems infrastructure environments including consolidated servers, 'cloud' services, desktop and/or mobile computer platforms. New applications and application enhancements are constantly evaluated, developed or acquired, and applied as older "legacy" applications retire, and as business organizations and related functions reorganize and/or have new needs.

For custom development efforts (when there are no commercial or open source applications that are appropriate for county business processes) our goal is to use industry standard application development tools and language environments that are adaptive in web-enabled and mobile models. For commercial software solutions, the goal is to implement solutions developed using industry standards and avoid propriety software architecture to the extent possible; propriety software is used only as a last resort. The Application architecture also protects the county's investment in 'classic' systems by enabling enhancements for enhanced usability, improved use of information and data analytics, search and reporting and end user controls. In addition, by keeping abreast of emerging technologies such as Web Services, XML, SOA and other contemporary methods, the county positions itself to take advantage of emerging opportunities offered by these as well as SaaS, mobile and cloud technologies. An exhaustive discussion is beyond the scope of this section; however, some examples of the county's application architecture and some recent developments are described here.

As the county balances determination among Commercial-Off-The-Shelf (COTS), in-house development and cloud/software subscription services for the diverse portfolio of agencies' business systems, the DIT framework for application development is applied. The framework

incorporates Software Engineering, Information Architecture, and Application Development Methodology. These principles and techniques are used to keep the Systems Development Life Cycle Standards (SDLCS) current. The resulting approach encompasses application life cycles for "cradle to grave"; that is, from the earliest stages of planning, through requirements and design, to implementation and post-implementation support, and hot back-up. New applications will be built on the most supportable and promising platforms and an architectural framework based on the future of IT taking into consideration industry best practices and sustainable trends.

Development platforms such as .Net and standards such as XML and Web Services are a key part of the strategy. The .Net platform provides the foundation for departmental and enterprise-wide applications and offers a stable application environment with more opportunity for componentization of business logic, sharing of common components, and the integration of business processes across application boundaries. Tools such as Visual Studio .Net provide county developers with a robust and flexible development environment. Encapsulating both existing and new business logic into "Web services" provide the ability to expose business processes across organizational and application boundaries, within the county, other local jurisdictions, state and federal government, as well as business partners. XML provides the common "glue" to hold together and provide consistent information across boundaries to facilitate data sharing among disparate platforms and systems. Enterprise Application Integration (EAI) products such as Microsoft BizTalk allow virtually unlimited ability to share, incorporate information and business processes from older, mainframe and client/server applications in to the new environment. A detailed "Architectural Framework" document has been developed, and is intended to be an organic document, flexible enough to reflect and incorporate rapid advances in information technology.

Geographical Information System Applications (GIS) –

The ArcGIS software suite provides high-end geospatial technology, GIS tools and functionality and presentation to the GIS user community. The software integrates visual or graphic data in the form of maps, with descriptive or attribute information from an organization's internal databases. ArcGIS provides the tools for analysts to gain access, visualize, and query both graphic and tabular data for better analysis and decision-making. There are three levels of license usage for ArcGIS that the county uses.

The highest level, ArcInfo, is used by professional GIS analysts for sophisticated analysis and processes. The View level is used by most users for creating maps and simply analysis of the county's geographic data sets. Arc Internet Map Server (ARCIMS) and ArcGIS Server are two components used to distribute highly customized GIS based applications through

the Internet/Intranet. Internet based mapping capabilities are incorporated as appropriate for augmenting and using available applications for public and internal government access via the WEB. See Section 2 for more information about GIS strategy.

5.2.1 The Application Tools

Application tools are information technology components used to develop and support application functions. Application tools include the support systems required to enable work planning and communications.

Programming/Development Tools – New applications under development use fourth generation object oriented languages and tools. This approach continues as web-based applications are developed, or as Commercial-Off-The-Shelf (COTS) systems or Cloud and SaaS applications are implemented. Industry standard life-cycle methodologies are employed to define, develop and implement new systems. Expert system technology is used to incorporate complex rule based functionality into systems. New developments use ASP and ASP.NET for the application layer. The county primarily uses Microsoft BizTalk for integration of applications at the presentation, business logic, and data layers. Sometimes JAVA is used depending on a specific systems' architecture and anticipated integration with other systems that use JAVA. SAP ABAP is the development language for the County's ERP system.

Since often times there are no viable COTS or SaaS solutions available that meet county agencies' unique governmental business needs and related statutory requirements, software development remains relevant, thus Software Engineering technologies are incorporated into the Systems Development Life Cycle Standards (SDLCS) to provide a disciplined and consistent development approach.

Documentum is the county's current enterprise content and document management software solution. The county also supports LaserFische/REAMS imaging solutions that have been in place for many years for smaller image archival and retrieval needs in some agencies. The County and Courts use the Commonwealth of Virginia's capabilities for certain court case records.

Collaboration Tools – The county uses Microsoft SharePoint and Lync which includes instant messaging and web conferencing. Additionally, the county uses other video conferencing and web conferencing tools to support

collaborative communications.

Database Management Systems (DBMS) - The county uses several database management platforms to support its business applications. Oracle and Microsoft SQL Server are the county's databases standards. Currently most of the Oracle and SQL databases on standard COTS development architectures are consolidated for greater cost efficiency, supportability and performance. The county IT standards call for complex, Internet-accessible or high access databases to use Microsoft SQL Server or Oracle, as appropriate. There are also "fat client "and web-based agency specific applications that are maintained separately by agencies. The standard for small agency applications is Microsoft SQL Server as the database.

Data Analytics and Business Intelligence – The county's portfolio currently contains several products used for reporting, analytic, and decision support. Business Objects/Crystal Reports, SAS, SQL Reporting Services and MarkLogic are the currently supported tools for reporting, and basic ad-hoc query. The county's strategy is to provide shared enterprise capability and infrastructure for reporting, query, transparency and decision support. As standards are defined for the county's enterprise solution(s), the portfolio will be rationalized into fewer products over time. This approach enables DIT to continue to modernize the existing systems portfolio while creating economies of scale for improved interoperability, search, dashboards and cost control.

Desktop Office Automation/Workstation Software – Microsoft's E-mail and Office Suite is the standard for general productivity automation functions including Word, Excel, PowerPoint, Outlook and SharePoint. Microsoft Internet Explorer is the standard for Web browsing, and is implemented with the standard image. Microsoft Project and Visio are available via enterprise software provisioning or virtualized Citrix application delivery. Agencies may have other desktop-based software for special, unique requirements.

IT Service Desk Software – The IT Service Desk provides all county employees with a centralized portal for computer support using a web-based solution which is used to support the Service Desk function leveraging the ITIL

framework. The Automatic Call Distribution (ACD) capability on the Avaya voice system is used to route calls. The IT Help Desk has a high percentage of first-call resolution.

5.3 Platform Architecture

Platform architecture defines the technical components of the infrastructure including server and client platforms, middleware, operating systems and interfaces supported, as well as other software tools and equipment used to operate applications. With the county's server consolidation and virtualization effort in FY 2011, Fairfax County's platform architecture was reduced from over 1000 servers to an average target ratio of 60:1, a project that continues. Servers include UNIX (Sun Solaris) and HP UX, and Microsoft Windows /2008, 2012 R2. Over 14,000 PC's provide end-user access to county systems. Laptops, iPads, Blackberries, iPhones, Droids, and other tablets and mobile devices also

support employee access to agency business systems. Workstations are standardized using Windows 8.1 operating system.

The county supports over 1,000 State and other non-county Windows workstations hardware devices.

In FY 2015, the county is implementing near-real time, active passive solution for the systems in the County's DIT Data Center using a third party off-site facility.

The following paragraphs describe the major features of the county's platform architecture.

5.3.1 Platforms

LAN-based Network Servers – Fairfax County's enterprise server environment uses Intel and Unix-based servers. Enterprise-class server technology Cisco blade technology, Dell, SUN and HP-UX servers for robust, high availability applications support the county's enterprise infrastructure applications such as Exchange, Active Directory, SQL, Oracle, Citrix, and major business systems such as ERP, GIS, Tax systems, Human Services systems, Land Development and Public Works applications, Library, etc.

The county has standardized on VMWare for virtualization platform and consolidated over 800 physical servers to the virtual environment. Virtualization in the SUN/Solaris environment in the form of zones has been implemented.

Desktop PCs, Workstations and Peripherals – DIT prescribes hardware platforms and desktop applications standards as well as procurement vehicles to optimize support and cost. Workstations (PCs) are replaced in accordance

with the county's PC Replacement Program cycle using adopted standards bundled with the MS Office Suite. The PC Replacement strategy applies to all agencies and provides the county economies of scale as well as a more robust, effective support environment.

County PCs are used for office productivity software, enterprise e-mail and client software, Internet/Web access software, and mainframe emulation terminals. The Windows 7 OS is being transitioned to Windows 8.1 in FY 2015, and Windows Mobile, iPads, and Androids continue to be deployed based on business needs. Windows 10 OS will begin to be rolled out over upcoming fiscal years. Desktop and network printing is accomplished primarily through the county's enterprise Ricoh multi-function copier/printer/scan/fax machine fleet. Agencies also use stand-alone desktop or work-group printers, and special use machines, i.e., plotters, etc.

5.3.2 Storage Area Network

A critical and required element of County IT operations is the management and storage of County data. Storage management provides capacity, timely access, and protection for the County's most important asset, its records and information. Storage management is also one of the most challenging aspects of IT operations. For each new day, county users and county agencies have data that is multiplying at an astronomical rate. Most county data is stored and backup electronically. This may include customer and agency data, partner data, financial records, analytics, and more. Critical data must be protected and recoverable if it becomes inaccessible to the users. Each Fairfax County government end user has a fundamental need to protect data and information, it is therefore, imperative that end users remain mindful of the location of their data so that DIT can better support backing up the data appropriately.

DIT is focused on delivering a multi-level storage infrastructure, based on a low-cost foundation, which provides a set of storage solutions for the most common needs across the County's computing

environment. There are areas where a central service can provide the maximum benefit for the least cost, leveraging economies of scale.

These storage solutions should be available with ranges of pricing, security, reliability, and availability that can be matched to the requirements of the data being stored. DIT's Storage Management Service provides Fairfax County with a centralized and secured storage platform to retain and store County's data. It is DIT's mission to ensure Storage Area Network (SAN) service is scalable, redundant and cost effective.

Fairfax County implemented its first Storage Area Network (SAN) in 2002. This enabled data storage in a centralized location, with redundancy and failover, mitigating the risk of data loss due to hardware failure. Data from all servers (mainframe, UNIX, and INTEL) now coexist on the same disk subsystem. In 2006, the county refreshed the enterprise disk arrays and fabric with EMC DMX-3 disks and Cisco fabric, which has since then been retired. As a replacement for these



retired storage infrastructure components, the county implemented NetApp and IBM XIV storage systems, which positions the county for future growth and the ability to meet strategic initiatives for Data Lifecycle Management. The total data storage requirement has grown from 394 gigabytes in 1998 to the current total of over 3.4 petabytes. The primary storage environments are NetApps and IBM XIV.

Storage Management requirements addressed by the Storage Area Network (SAN) are:

- Scalable storage capacity that allows users to increase storage as needed.
- Modular, adaptive architectures which allow users to deploy storage in a variety of centralized and distributed environments with re-deployment capabilities as needed.
- Highly available architectures to minimize/prevent downtime.
- The storage solutions provide a range of cost savings. Using NetApps for virtualization standard storage platform saves the County money because of the built-in features such as de-duplication, which help to control the amount of storage needed for the counties growing server requirements.
- The new XIV storage provides the high volume input/output operations required by our high volume Database and Email systems
- Higher levels of performance to support the ever-growing volume of online data.
- Higher performance backup and restore operations using snapshot technology helps to support shrinking backup windows
- The ability to share data across the enterprise rather than building "islands of data."
- Easy to use, centralized management tools that allow hardware and data to be distributed.

5.4 Network Architecture

The county views a strong, viable communications infrastructure as a vital component to the overall IT strategy of maintaining its successful deployment of cost-effective solutions that optimize business goals. The enterprise communications infrastructure includes voice and data technologies, as well as various network topologies, transmission services and protocols necessary to facilitate the interconnection of server platforms, intra-building and office networks (LANs), and inter-building and campus networks (WANs). The network is thus responsive and reliable for county business applications and allows for the uninterrupted flow of voice, data, and video information.

The plan and architecture take into account growth based on the needs of county agencies as programs expand for both intra and inter county connectivity. The core network for intra-county is supported by the county's fiber I-Net, integrated with carrier lines for full coverage, back-up and redundancy for certain critical systems. The underlying infrastructure is able to support voice, data, and video, providing increased, cost-effective bandwidth potential, and improved

output. The core fiber I-Net is a metropolitan fiber ring that connects over 400 county and schools facilities, with DIT supporting over 14,000 data ports and over 15,000 voice ports on the communications infrastructure.

Network technologies tend to refresh every 18-24 months, which creates additional challenges with respect to keeping network architecture and standards in line with evolving business requirements, information security and other support needs. Web-enabled applications and Internet tools such as Social Media have rapidly expanded; this coupled with business continuity have resulted in expansion from a single high capacity DS-3 for internet services to four high speed LAN based Internet connections from two diverse IPS. E-Government applications, streaming video, teleconferencing, and more integrated and complex applications drive the requirements for the county's communication infrastructure and its components, thus the communications infrastructure is flexible and designed for low-cost, incremental enhancement.

5.4.1 Enterprise Data Communications Network

The Fairfax County Government's Enterprise Data Communications Network serves as the data communications backbone that provides countywide access to information technology resources. All systems connected on the enterprise network are based on well-recognized, open standards; compliance with published standards is required for any network-connected device or system. The county standard network protocol is TCP/IP. Gigabit Ethernet is the standard LAN backbone speed in the county and 100 MBPS is the standard desktop speed. All platforms are interconnected via the enterprise network including PCs, servers, multi-function printer/scanner/copier device fleet, and the mainframe computer. Additionally, various wireless technologies are rapidly expanding throughout the county's network. The county currently uses commercial broadband wireless infrastructure to support wireless applications, data, images, live video to the field and mobile devices supporting primarily public safety responders. The ongoing strategy has allowed for the integration of the wireless and wire-line networks.

The Enterprise Wide Area Network (WAN) is built of two different architectures: I-Net or the Institutional Network, which utilizes the dark fiber provided to the county through the COX and Comcast Cable Franchise Agreements (see section 5.4.2 below). I-Net spans seven hub sites and two key resource centers; Massey Public Safety Campus and the Government Center. These sites are networked via a 10 gigabit DWDM fiber optic backbone. The I-Net DWDM backbone provides connectivity to 192 remote sites running a 1 Gigabit uplink from the backbone to the site. I-Net also employs MPLS (Multiprotocol Label Switching)/VRF (VPN Routing & Forwarding) to allow I-Net to service many types of diverse traffic whether it is enterprise, public access, public safety, or voice over IP. Through MPLS/VRF each type of traffic can be separated logically for security support, as in enterprise vs. public access, or prioritized in the case of voice traffic. Currently MPLS technology has allowed the county to support 20+ logical networks to flow across the I-Net backbone. I-Net has now positioned the county Data

Communications Network to respond quickly to the ever-changing technology needs of its customers. The remaining WAN sites are supported by the use of several technologies to include High-speed broadband VPN technology, ATM, and Transparent LAN Services based on user group and bandwidth needs.

A dedicated Public Access Network was established in FY 2005. This network provides public access computers a various county locations to citizens of Fairfax County for access to county and Internet resources separate from the government Enterprise Network for security reasons. The Public Access Network includes all public libraries, community and recreation services sites, and select human services sites. The design provides for separate physical networks at each site while sharing the existing WAN/I-Net infrastructure and using logical separation on the WAN/I-Net. A firewall between the Enterprise Network and Public Access Network allows for county IT staff to manage the infrastructure down to the desktop for each site. This model will be the standard for any new facilities requiring both enterprise and public access.

The county continues to implement wireless LANs and wireless data over commercial systems as required by business and operational requirements. The use of this technology is carefully evaluated to ensure all county data is protected from unauthorized access. Currently, non-broadcast SSID's, NAT and MAC address registration, and digital certificates are required to gain access to the private WLAN. VPN technology is employed to protect data over commercial services.

Network Management is supported on four platforms using Orion Solarwinds – Monitors I-Net infrastructure for up/down alerting and performance issues, and Verizon Managed Services – provides fault reporting of all ATM and I-Net sites. Fairfax County continues to migrate legacy carrier circuits to COX and other providers which provides better quality and cost.

5.4.2 Institutional Network (I-Net)

The county's network backbone (I-Net) is the primary infrastructure interconnecting sites for the enterprise communications network, supporting both the county government and Fairfax County public schools. The I-Net was provided through the Cable Franchise Agreements with COX Communications-Northern Virginia and Comcast of Virginia. Fairfax County's I-Net

is one of the largest and most complex local government networks in operation. This carrier-class network comprised of over 4,000 km of single mode fiber (SMF), in a ring, hub and spoke topology. There are seven Hub sites that are redundantly connected in a ring. The fiber optic infrastructure enables the county enhanced capabilities for transporting data, voice and

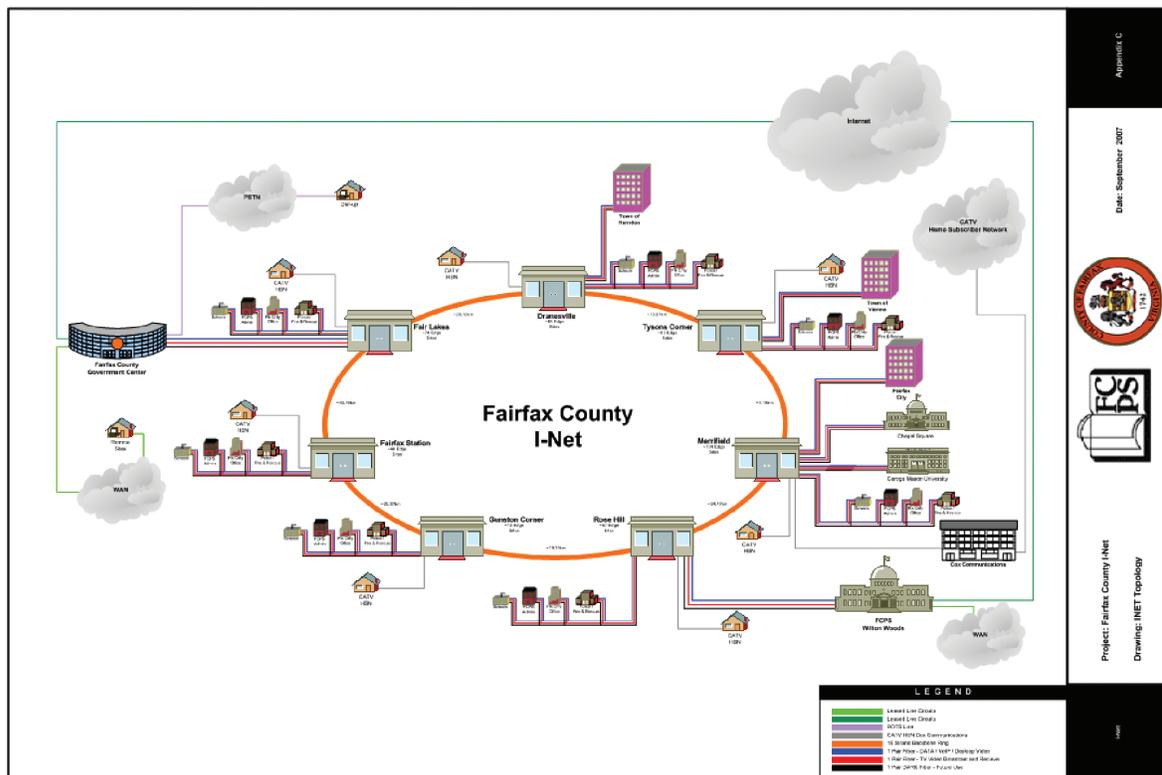
video. The I-Net provides services such as high speed data, Voice over IP (VoIP), broadcast video, video conferencing, streaming video, and distance learning. The network has several origination points, and facilities for controlling the switching and routing of data, voice and video signals among all participating sites.

Although broadband service is available through local telecommunication companies, it comes at a significant price, a loss of flexibility, and for some services, only limited availability. The I-Net provides bandwidth that is virtually “unlimited” while meeting the county’s present and future communication requirements. The I-Net is the “super highway” for the county’s internal video, voice and data communications. The virtually “unlimited” bandwidth potential provided by the I-Net allows the county to amortize its cost over the life of the I-Net with an overall long-term operating cost savings. The ultimate goal of converged voice, data and video technologies will be facilitated through I-Net. The I-Net can also serve as the back-haul for the county’s wireless broadband initiative for public safety (See section 5.4.3).

The I-Net Video Network is a scalable integrated video transport system which provides a high quality image

delivery system with scalable bandwidth, capacity, and growth potential for future Fairfax County Government and Fairfax County Public School applications. The I-Net video network transport has two distinct communication links: Coarse Wave Division Multiplexing (CWDM) is the transport technology that provides forward and reverse transport for I-Net enabled county facilities. The forward (downstream) transport provides select cable TV operator channels and local origination content produced by the county’s Video Production facilities for services such as distance learning. Each I-Net enabled facility is equipped to transmit reverse (upstream) video to the county’s Video production facility for processing.

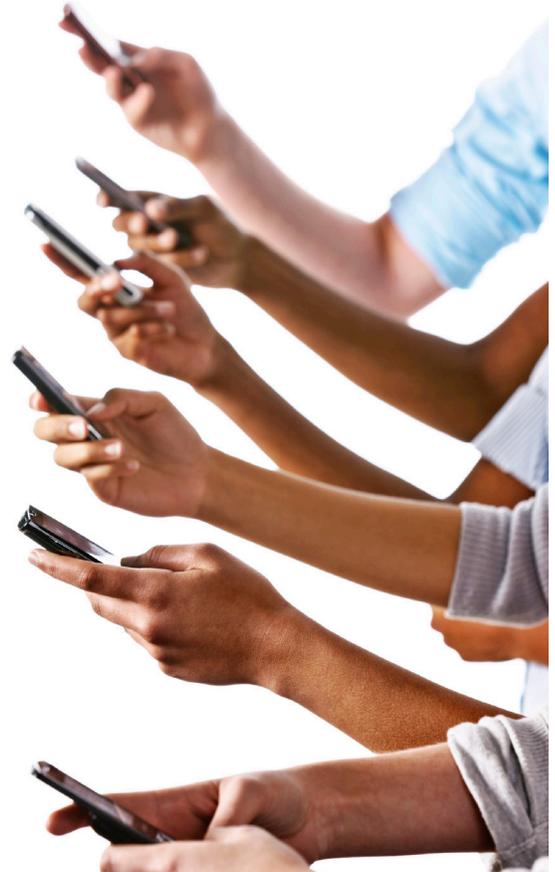
The County participates in the I-Interconnect in the National Capital Region (NCR-Net). Fairfax County has five direct interconnect. NCRnet is a foundational; interoperable communications infrastructure utility for local government first responders and emergency support functions with neighboring jurisdictions and Fairfax County DIT manages the NCRnet program, engineering and operations for the region.



5.4.3 Mobile Data Network

To support operations of the various public safety agencies, the county activated AT&T and Verizon Commercial Wireless Broadband service in 2007 to allow the response vehicles of the Police, Fire and Rescue, and Sheriff's departments to access the county's Computer-Aided Dispatch (CAD) system, the Law Enforcement Incident Management system, and various databases maintained by the Commonwealth of Virginia and Federal law enforcement. This Public Safety system consists of more than 1500 Mobile computer Terminals (MCT). Both carriers are used to support a growing portfolio of mobile applications including Public Works and Environmental Services, Zoning, Health Department, and various Human Services agencies consisting of a user base of over 1,000 mobile devices.

To enhance the county's goals for mobility, telework, operational cost efficiency, Continuity of Operations Planning, and environmental stewardship and 'green' IT, a major component of the enterprise technology infrastructure includes Enterprise mobile device management (MDM) that has been incorporated into the enterprise network and platform enabling infrastructure. MDM allows the usage of smart-phones, and tablets to include Apple, Blackberry, and Android (for example). With the county having a mature 'private' enterprise cloud, this technology has been adopted and integrated with the enterprise network. Symantec's Mobile Management Suite for the MDM architecture.



5.4.4 Voice Communications Network

The county's voice telecommunications architecture is the Avaya enterprise-wide VoIP capable platform. The solution uses the latest technology that includes VoIP and the county's fiber-optic network for connecting county facilities. Using the county's fiber backbone (I-Net) greatly reduces the total costs of providing telecommunications services. The evolution of the Avaya communications platform on a fully integrated broadband network synchronizes and leverages communications capabilities, security and will help meet the present and future IT and county agencies' business needs to complement cost saving advantage of using the I-Net for calls between locations. DIT is implementing Session Initiation Protocol (SIP) Trunking to further reduce the cost of the connection to the carrier network. This will ultimately lead to an end-to-end IP based broadband communications environment that is flexible, secure and very cost effective.

The voice system design uses two main Fairfax County government sites – the Massey Campus and the Government Center Campus - as the "core" for the Avaya enterprise platform. A streamlined dialing plan has enabled more efficiency and less cost for agencies that have a geographically dispersed footprint. The Core + Edge configuration has yielded much tighter voice communication integration between locations and also a highly fault tolerant network. Avaya collaboration applications, such as the Call Center Elite application, allow agencies to have call center agents geographically dispersed across the county, yet they appear as a single work group from a citizen facing standpoint.

The system architecture is also integrated with a new Call Management System (CMS) solution from Avaya. This solution's capability greatly improves

the collection of necessary statistics used by Contact Center Managers to evaluate the county's responsiveness to citizens and constituents.

5.4.5 Public Service and Public Safety Radio Networks

The county operates two voice radio 800 MHz trunked radio systems, one dedicated for public safety emergency response operations with over 6,000 units, and the other that supports more than 3,000 radios for Fairfax County Public Schools Transportation (school buses), and county agencies including the Department of Public Works and Environmental Services, Park Authority, FASTRAN, the CONNECTOR bus system, and other non-public safety county agencies. The county's planning effort that will consolidate the Public Service and Public Safety Radio Systems is enabled through the new IP based technology. Implementation is planned to start in FY 2016.

The Public Safety Radio system incorporates a digital IP-based technology permitting improved data access and system management, better integration with the 9-1-1 Computer Aided Dispatch system (Intergraph), improved regional interoperability, and the inclusion of a new tower in Bailey's Crossroads for improved system coverage. The two radio system infrastructures, Public Safety and Public Service, are architected to allow interconnection, as well as back-up capability for each other.

County staff also serves as Regional Coordinator for the entire National Capitol Region's assure regional radio interoperability.

Also, like a growing number of major local governments, the county is interested in FirstNet, which provides for a national broadband capability for public safety as feasible, using 700 MHz for Public Safety broadband, but also open to the broadband wireless design is part of the comprehensive enterprise network strategy that will leverage existing voice wireless infrastructure (see 5.4.2.1), and integrate with the county's fiber back-bone infrastructure for back-haul (see 5.4.1.2 below). The county has been vociferous in its response to the FCC, regarding the need for a private broadband wireless network for public safety for the National Capitol Region. Unfortunately, our waiver languished in FCC with no decision being made, and now with FCC's recent approval to allocate the D-Block 700 MHz frequencies to public safety and first responders, and the creation of a board to manage and oversee this development, all pending waivers, including ours, were terminated until the new "board" takes effect and reviews the approach to a nationwide network.

5.5 Internet Architecture

Fairfax County's Internet architecture supports the County's e-Government program which utilizes emerging WEB technologies to make county services and information readily accessible and available to the public, with interactive services to conduct business (e.g., pay taxes, apply for permits, etc.), and searchable access to data (real estate assessments, Human Services resources, etc.). The e-Government architecture defines the standards, technologies and guidelines for public access, and requirements for conducting on-line business with county agencies, state agencies and outside entities. To meet the demand of changing times, recognizing mobile technology is key to communications; the county's e-Government program has taken the initiative (m-Government) to provide mobile access that enables greater interaction and service delivery such as mobile device-compatible web access and applications.

The county's internet architecture is comprised of the following:

- **High Speed Connection to the Internet** – The County's fractional DS-3 connections to the Internet provide internet access for county staff as well as outside access to the county's Web server(s) to residents, business, and others via the Internet.
- **Public Access Web Farm** – The County's Public Access Web Server provides Internet users with a vast amount of information made available by various agencies. The Web server can be viewed as an "on-line service counter" where residents and others may obtain information related to services, licenses, taxes, recreation, court filings, etc. The Web farm acts as the distribution or collection point for information obtained from or provided to enterprise databases via "Application Servers".

The Farm is designed to contain multiple web servers distributed in different locations to provide high availability, high fault tolerance, and high bandwidth throughput capabilities. The architecture is designed in such a flexible way so that the farm can easily scale out to meet constituents' needs in the event of sudden increase of web traffic. It intends to consolidate public facing web applications throughout the agencies in the county, which would eliminate the needs to set up separate servers for each web application and as a result leads to significant cost-savings. As the county becomes more digitized each day, more and more county's services and information are transformed into web applications and added to our public access web farm to serve citizens.

- **Intranet Web Farm** – The County's Intranet (FairfaxNET) Web Farm provides a portal to access county information and applications for agency and employee use. The Intranet Farm provides a platform allowing county employees and administrators to manage back-end data for the large number of public facing web application. Integrated with a SharePoint web farm, it also provides a platform for county employees to collaborate on documents and projects electronically.
- **Mobile Web Farm** – The Mobile Web Farm provides mobile phone users with information made available by county agencies via Web Content Management systems in a mobile device-friendly format, thus allowing citizens to obtain information and conduct e-service transaction via mobile devices. The mobile web farm also enables county developers to continuously develop more web-based mobile applications to transition the county from 'e'-government to 'm'-government. The Mobile Farm is

built on top of Public Access Web Farm, therefore retains the same capabilities of high availability, high fault tolerance, and high bandwidth throughput. The Mobile Farm not only enables citizens to view the county's website on their mobile phone web browsers, but also delivers contents to county's native mobile applications including county's iPhone native application published in AppStore, and Android native application published in Google Play. The architecture of the Mobile Farm is designed in such a flexible way that allows the farm to keep up with the ever growing numbers and varieties of mobile devices constantly released into the market, and as a result always ensure the contents is rendered properly for various mobile devices.

- **iPhone Application Infrastructure** – iPhone Application, for release into Apple's App Stores, allows iPhone users to access county's web contents and interact with various county e-services. SDK environment, iPhone application template, standards, and App Store distribution channel have been developed to further enable the county to provide m-government services. The architecture is designed in a flexible way that would enable developers from other county agencies to develop their own modules separately. These modules would later be added to the original package to ensure the app would continuously grow and improve with contributions from the entire community of developers.
- **Interfaces** – The county's application servers and enterprise databases provide the link that allows access to data residing in a wide array of sources. The interfaces make it possible to access data from virtually all of the county databases: Oracle, SQL, and MS Access. The interfaces are comprised of "Application Program Interfaces" (APIs), Open Database Connectivity (ODBC), Service Oriented Architecture (SOA), and other standards that enable the access layer of the web architecture.



5.6 Security Architecture

The Information Security Office defines and enforces the security standards and policies necessary to protect the county's information assets and technology infrastructure. IT Security continues to be a fundamental component of the county's enterprise architecture and e-Government strategy. The security architecture fuses best practice security principles with a hardware and software infrastructure, supported by policies, plans, and procedures. This layered architecture is designed to provide an appropriate level of protection for all county information processing resources, regardless of platform, and includes incorporation of industry best practices to yield an overall reduction in risk.

The objectives of the information security program are to ensure confidentiality of information, integrity of data, systems and operations, technical compliance with legal mandates such as HIPAA and PCI, privacy and availability of information processing resources. The information security program utilizes a multi-faceted approach to meet these objectives, an approach that includes threat reduction techniques, technology and management solutions, and the vigorous implementation of awareness activities. The basic elements of identification, authentication, authorization, access control, and monitoring of information processing activities are employed throughout the enterprise. The secure network architecture is best described as a

defense-in-depth approach to network security design, to include a method of secure network segmentation. In this architecture, modular infrastructure building blocks are deployed to better shield important resources within the network.

The "SAFE" network architecture was developed and deployed to divide the network perimeter into the following five business groups: E-Commerce, Internet Access, Partners, Emergency Operations, and Public Access. Each group is protected by its own physical firewall, with firewall policies tailored to each specific business area. This strategy has optimized firewall performance and limited risk exposure to each business group.

- The E-Commerce business group supports all public facing web services providing access to county resources for both citizen and business.
- The Internet business group is used to control county employee access to the internet and allow for content and virus scanning.
- The Partners business group allows for connections to external "Trusted Partners" to include Fairfax County Public Schools, Fairfax County Water Authority, Commonwealth of Virginia (State Police, State Health, Department of Social Services, Supreme Court of Virginia, Department of Juvenile Justice,



and State Board of Elections) as well as public safety connections for several adjoining jurisdictions.

- The Emergency Operations group was established to secure the Emergency Operations Center providing IT resources to the Department of Emergency Operations.
- The Public Access network was built for the Libraries and Community and Recreation Services.

Remote access via VPN and Citrix services provides access to the county's Enterprise Network resources for telecommuters, vendors, remote access users or business travelers, as well as several small Fairfax County offices. Security for remote access is managed through a Remote Access Server using security tokens and PIN numbers. Additionally, IT Security plans to acquire and implement a mobile security solution which can begin to address the challenges of data loss prevention and security on mobile devices, such as tablets and smartphones, which may access county data from remote networks.

Firewall technology is used as the main perimeter defense with all access from the Internet routed through the county's system of firewalls. In addition, the county configures broad network traffic filtering and selective routing at firewalls provisioned nearest to the county's Internet peering points, reserving more granular filtering and routing for network traffic transiting to the internal network connection. Classic authentication for each internal user is based upon a unique UserID (also called a sign-or log-on) combined with a unique, strong password. To improve the secure access and authentication to web-based applications and backend servers, the county has implemented an identity management platform that positions DIT to leverage the security architecture framework well into the future. CA e-Trust, through its SiteMider module, provides a software platform of shared services that includes reduced sign-on, authentication management (to validate who you are), and entitlement management (to authorize what you are allowed to do on the site) for web-based applications. eTrust also provides a secure reverse proxy solution that passes requests to enterprise backend content servers, and returns resources to the requesting client, thus allowing for a practical solution for the protection of internal assets. With Identity Management in place, the county can manage user profiles for both internal staff and public access, making personalized e-Government a reality. Expansion of eTrust will continue in order to provide a secure access and an end-user authentication platform for external users. As part of the implementation of

FOCUS, the SAP IDM solution provides for user provisioning between the county and schools enterprise networks.

Intrusion Detection System (IDS) detects intrusions within the network, and the Intrusion Prevention Systems (IPS) primary function is prevention rather than detection. IPS devices can proactively prevent intrusions by detecting signs of an intrusion and/or detecting an actual intrusion attempt. IPS provides capacity to perform real-time analysis of Intrusion attempts to determine if sensitive data, systems or network devices are being attacked or if a breach of confidentiality, integrity, or availability has occurred. The primary objective of Intrusion Prevention is to reduce damage and isolate/ contain malicious traffic. With the large quantities of log and alarm data generated by firewalls and sensors, a specialized application to support the role of correlation and alerting has also been implemented. The IPS solution conducts a comprehensive threat assessment and allows for quick identification of credible threats to the organization in order to facilitate expedited response and containment of intrusions and malicious activity.

As the key aspect of the IT Security strategy, the county employs a private/public network model. Sensitive and critical assets are located on the private portion(s) of the network while information and services available for public use are located on the public segment(s). CITRIX, VPN, Web Access and dial-up technologies are available for remote users. Each of these services requires a personal security token and LDAP-based authentication for access, otherwise known as two-factor authentication. Remote access is approved at the same level as if the user were physically at their work site. Identification and authentication, access control, and auditing functions are performed on the specific platforms using the capabilities inherent in the appropriate operating system. Mandates such as HIPAA and the Payment Card Industry (PCI) standard have increased system monitoring and policy enforcement requirements. IT security awareness activities have been implemented to effect a culture change for all employees. Through security conscious employees, realization of the return on investment in security technologies can be leveraged further as the overall risk to data and systems is reduced.

The Fairfax County Government is dedicated to the protection of its IT assets and the data & information in its charge. The county is also dedicated to the task of ensuring that no unauthorized access or use of such data and information occurs. As evidence of its long standing, best practices approach and implementation of IT

Security, the Fairfax County Government received Cybertrust's Enterprise Security Certification in May 2010.



The Security Management Program (SMP) is a comprehensive security assessment and certification program that validates an organization's security posture. This certification attests that Fairfax County Government has made security a priority, and employs renowned security processes and technologies in the establishment and maintenance of a proactive and

comprehensive information security program. The certification also acknowledges that the county's information security controls, policies and procedures have been examined, measured and validated against a stringent set of generally accepted enterprise security requirements. The SMP utilizes proven International Organization for Standardization/ International ElectroTechnical Commission 27002 security controls and helps customers such as Fairfax County Government prioritize and identify security risks in an ongoing manner, and then proactively manage threats before they have an impact. Fairfax County is the only local government within the National Capitol Region that holds this certification.

5.7 Technical Architecture Standards

The Department of Information Technology establishes, updates, and retires technical standards throughout the year to ensure alignment, consistency, and modernization in the selection and design of business solutions across the county.

A platform is established as a standard through a governance process. This approach enables DIT to define and develop a portfolio of technology solutions that can be effectively managed and supported given available resources. Typically, projects in the concept stage come before DIT's **Architectural Review Board (ARB)** to discuss the technical approach and business objectives. Where the concept relies on new products or non-standard configurations, the details are assessed to establish general conformity to enterprise objectives. The ARB may steer the solution back to conformance, or it may authorize the use of a new product or configuration by granting a waiver. The ARB may alternatively recommend that the new product replace an existing standard, or that it be added to the list of supported standards. When DIT's executive management approves a recommendation, the standards are updated accordingly. Once adopted, the new product and its former standard, if any, are further classified as emerging (new), current (established), twilight (becoming obsolete), or sunset (referring from support as of a known date).

When a standard is established, it indicates that the designated technology will be supported by DIT as applicable, and that the selection is in alignment with broader IT goals, objectives, and strategic direction. In some cases, a standard may be adopted in advance of procurement or deployment, to provide strategic

direction for emerging business needs. Adoption of a standard is not intended to convey endorsement for, or recommendation against, any specific product.

Declaration of a standard product(s) indicates DIT's strongest recommendation for selection of the available product(s) over any alternatives that may be similar or comparable. Generally, any solutions that will rely on the systems enterprise infrastructure, connect to the network, or depend upon DIT support must be fully conforming. Agencies using or selecting non-standard solutions may apply to the Architectural Review Board for a waiver on the basis of business needs and justification.

Standards are essential to sound cost controls in software licensing and maintenance, hardware, services, training, and integration. Having fewer platforms in use enables allocated resources to better support the information systems under management. Agencies are encouraged to invite DIT members to participate in selection and technical advisory committees for the Request for Proposal (RFP) process. DIT and its ARB should be consulted in advance of an RFP, to help explain technical alternatives and develop the proposal language to support conformance with existing and emerging standards.

The standards shown here do not represent a comprehensive view of all the products in use across the County. The list is intended to convey the primary standards for the major solutions to be supported by DIT and/or delivered with DIT resources.

Revised January 2015

**FAIRFAX COUNTY INFORMATION TECHNOLOGY ARCHITECTURE
PLATFORM ARCHITECTURE: END USER SOFTWARE**

Component	Environment
Operating System	Windows 7 / 8.1
Word Processor	Microsoft Word 2010 / 13
Spreadsheets	Microsoft Excel 2010 / 13
Presentations	Microsoft PowerPoint 2010 / 13
Database	Microsoft Access 2010 / 13
E-Mail Client	Microsoft Outlook 2010 / 13 Outlook Web Access (latest release)
Project Management	Microsoft Project Professional (latest release)
Graphics	Microsoft Visio Professional (latest release)
Web Browser	Microsoft Internet Explorer – IE10 / IE11 and above
Antivirus	Symantec AntiVirus (latest version) for Workstations and Servers
Patch Management	Microsoft System Center Configuration Manager (SCCM) 2012 R2 Windows Server Update Services (WSUS)
Mainframe Terminal Emulation	Blue Zone
Thin Client Access	Citrix Xenapp 7.6
Other	Must be approved for Business Unit standard image/requirements

**PLATFORM ARCHITECTURE:
END USER HARDWARE**

Component	Desktops	Laptops	Tablets
Power	Single	Single	Single
CPU	Intel Quad Core i7 -3770, 3.4GHz Optiplex 9010	Intel Core i5-3340, 2.7 GHz E6430	i5-3337U (3M Cache, up to 1.80 GHz)
Disk Configuration	250 GB, SATA Drive	250 GB, SATA Drive	128 GB SSD
Disk Configuration	500 GB, SATA drive	320 GB, 5400 RPM Hard Drive	128 GB SSD
Media Drive	16X DVD R/W combo drive	8X DVD CD-R/W combo drive	
Memory	8 GB, Non-ECC DDR3, 2 DIMMS	4 GB, SDRAM (1 DIMMS)	4 GB
Monitor	22" Economic, Flat Panel, DVI/VGA	14" Wide Screen WXGA+ LCD Panel	11.6" Full HD (1920 x 1080) IPS (400 NITS)
Video Card	Integrated Graphics DP/DP/ VGA w/DP-to-DVI Adapter	Intel® HD Graphics 4000	Intel HD Graphics 4000
Interface Card(S)	Ethernet 10/100/ 1000 Base-T	Built-in 10/100/1000 GB Ethernet card	None – 3rd Party USB to Ethernet
Wireless	N/A	Intel Centrino Advanced N 6205 802.11a/b/g/n	Intel Centrino Advanced N 6235 802.11 a/b/g/n
Operating System	Windows 7 / Window 8.1	Windows 8.1	Windows 8.1
File System	NTFS	NTFS	NTFS
Maintenance	5 Year on-site, next business day	5 Year on-site, next business day	3 Year on-site, next business day
Additional Hardware Requirements	Sound bar not included	Port replicator, external mouse, keyboard and monitor if used as desktop, Security Lock	Keyboard, and Port replicator

**PLATFORM ARCHITECTURE STANDARDS:
HAND HELD MOBILE DEVICES**

Component	Environment
Platform/Devices	RIMM/Blackberry Syclo Blackberry Enterprise Server iOS (iPhone, and iPads) Androids phones and tablets

PLATFORM ARCHITECTURE: Server Standards

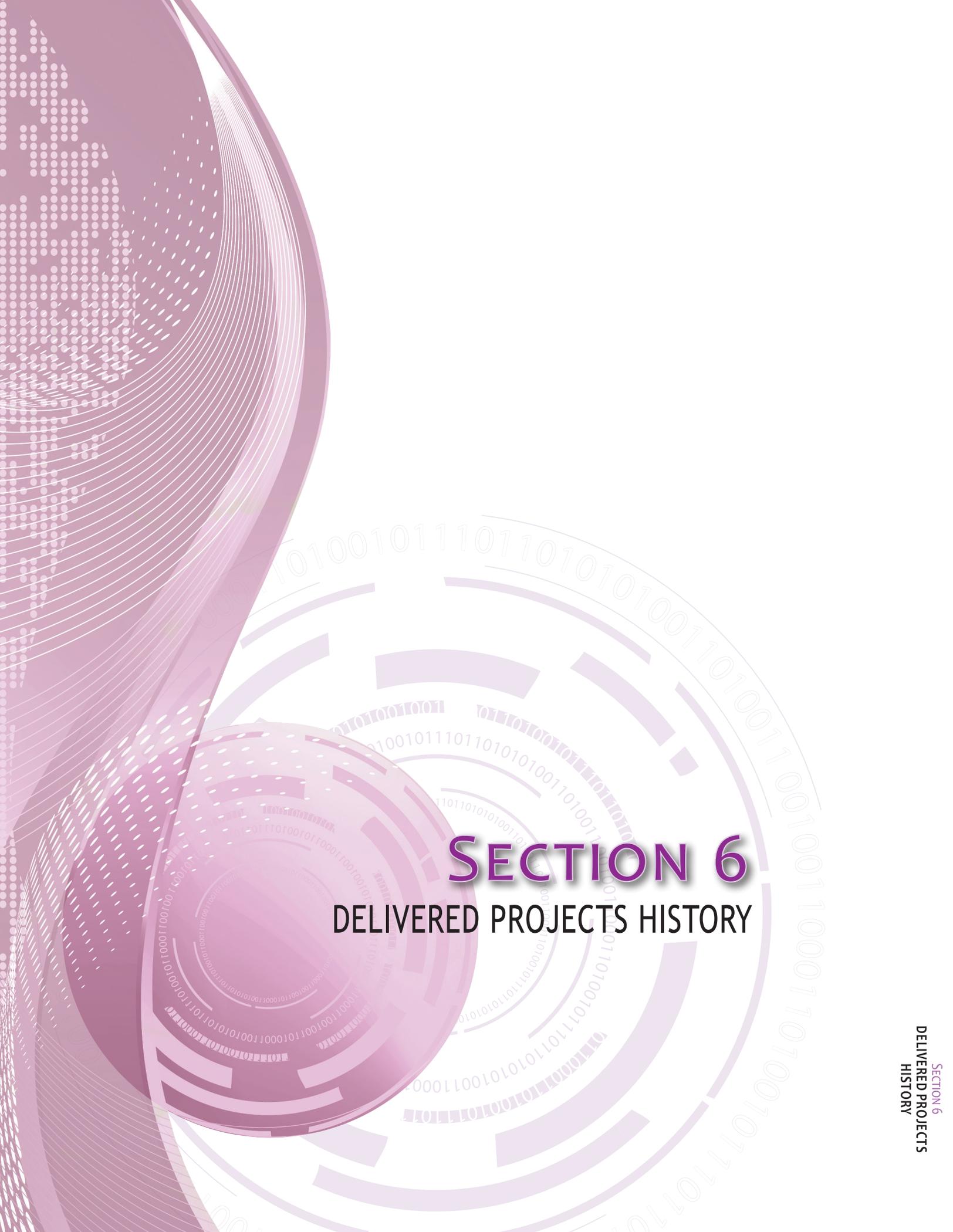
General Server Standards: Servers needs are determined based on many factors, including utilization of existing infrastructure, requirements of planned projects, and the availability of specific funding for new equipment. Some platforms will share components and others will not, depending upon the unique circumstances for each project and product. Sharing and re-use are promoted when feasible. The county's goal is to provide a homogeneous environment to streamline support and maximize resources, using virtual environment and consolidated server farms supporting many applications.

**PLATFORM ARCHITECTURE:
GENERAL SERVERS**

Component	Environment
Operating System	Microsoft Windows Server 2012 Enterprise Edition Solaris (latest release) z/OS 1.4
Thin Client Access	Citrix Xenapp 7.6
Hardware	Intel (Windows) SPARC(UNIX) HP UX IBM Z-Series (Mainframe)
Backup	Symantec Net Back Up z/OS DFSMS Net App snap shots
Storage	IBM XIV (SAN) NetApps (NAS) EMC Data Domain
E-Mail	Microsoft Exchange Server 2010 / 2013 Enterprise Edition L-Soft LISTSERV
Web/Application Servers	Preferred: Microsoft Internet Information Server – IIS7 / IIS8 / Above Apache Web server (if required by COTS package) Tomcat (if required by COTS package) JBOSS BEA Systems WebLogic Microsoft BizTalk Web Methods Oracle Application Server 11g
Configuration/Change Management	VMware Service Manager v9.1 – ITIL Service Management

**PLATFORM ARCHITECTURE:
ENTERPRISE SOLUTION PLATFORMS**

Platform	Current Standards
Report Writing: Departmental Reporting Needs	Business Objects Crystal Reports Microsoft SQL Reporting
Statistical Analysis	SAS
Enterprise Reporting Business Intelligence	SAP/BOBJ
Document Scanning/Imaging	Documentum Enterprise Content Management / Captiva
Web Content Management	Documentum Web Content Management
Web Search Engine	Google Appliance
Survey Instrument Software	SNAP 8.0 ProNet Edition (w/Scanning module)
Correspondence Tracking	Intranet Quorum
CRM	Siebel / Microsoft Dynamics
IT Services Management	VMware Service Manager v9.1
GIS	ArcGIS 9.3 & Extensions ERDAS 9.3 Arc Internet Map Server 9.3 / ArcGIS Server 9.3 ArcSDE 9.3 ArcPad 8 OnPoint 6.2 Electronic Field Study 2.7
ERP	SAP core; ESS, MSS portal
Voice Communications	Avaya S8700s and G700s Servers



SECTION 6

DELIVERED PROJECTS HISTORY

Delivered Projects History

Below is a historical listing of delivered projects in the IT Plan since its inception. These projects represent Fairfax County's continued commitment to delivering quality information technology programs that provide service efficiencies, ensure integrity of the county's information, and provide citizens easy access to county information and services.

Project Name and Number	Description
2G70-001-000 Human Services (IT0002)	
Harmony Information Systems	In FY 2002 this project replaced the State-supplied VUWRS system with a COTS package to enhance case management and client purchased service processing for child and adult programs.
Human Services Workflow	In FY 2003 this project provided workflow system for the electronic management of documents and data in Human Services agencies, and included the delivery of an intranet based contract management application.
Human Services Decision Support	In FY 2004 this project developed a data warehouse to eliminate duplicate data from existing Human Services legacy systems. The system enabled efficient reporting while securing client confidentiality. A reporting and analysis tool provided a user interface to execute reports and queries against the data from management and executive information. Completion date FY 2004.
Athletic Facilities Scheduling System (AFSS)	AFSS provides Community and Recreation Services (CRS) streamlined and automated processes for the scheduling of county and school athletic facilities. The system enhances public access to CRS services by providing on-line registration and application processes. Project was complete in FY 2009.
Homeless Information Systems	In FY 2007 this project implemented an automated system to track and monitor the homeless population served by the County and the local Continuum of Care. In compliance with a HUD mandate requiring all jurisdictions receiving HUD grants to track the use and effectiveness of service programs designed to assist the homeless population.
Harmony Web Enabling	This project transitioned Harmony users to a Web based application and eliminated of various paper based process.
Human Services Cost Allocation System	In FY 2007 this project implemented a system that ensures compliance with federal and state cost allocation methodologies, data reporting, analysis, and security. The system serves as the basis for claiming federal and state reimbursement for the county's eligible social service expenditures.
IT0003 Land Development System*	
LDS net	LDSnet is a single repository of land development data designed as a search and query tool. LDSnet allows update access as well as upgraded the application software to comply with County standards and vendor support.
IT0004 Geographic Information Systems*	
Fairfax County Master Addressing System (MAR)	This project delivered a single standardized and centralized parcel address database for all site parcel addresses (365,000+) in Fairfax County. It ensures valid and complete address information that is a foundational requirement for efficient and effective operations, and essential for effective operation of the new CAD/911 system. The MAR is the authoritative source of (sites) addresses in Fairfax County. Project was substantially complete in FY 2008.

Project Name and Number	Description
2G70-005-000 Tax and Revenue Modernization (IT0006)	
Tax/Revenue Systems	This project successfully replaced the County's legacy real estate mainframe system with a commercial-off-the-shelf (COTS) product called Integrated Assessment System (IAS). Implementation of IAS has allowed for a comprehensive overhaul of many existing functions such as real estate administration, account maintenance, assessment, exemptions and adjustments, accounts receivable, and billing. The core system was completed in FY 2004.
Revenue Collection Cashiering	This project replaced an unsupportable legacy cashiering system with a COTS cashiering system for the receipting and depositing of taxes and fees. The project implemented a complete revenue collections solution that provides the functionality required and is technically capable of accommodating legislative changes and business operations.
Tax/Revenue Administration	This final project delivered a Fairfax County web hosting solution for the IASWorld/iCare module, currently hosted externally. It eliminated the need to transfer sensitive Real Estate Information to an external vendor and provided iCare users and Fairfax County taxpayers with a more recent view of Real Estate information.
IT0008 Library Projects*	
Self-Check Out and Wireless Public Access	This project enhanced the library system's services by successfully implementing automated Self-Check Out at library circulation desks through out the library system and providing wireless public access to on line information services and catalogues at Fairfax County libraries. The projects were completed in FY 2007 and FY 2009.
IT0011 Document Management*	
County Archives and Records Center – Automated Records Mgt. System	This project enabled the County Archives and Records Center to increase the efficiency, effectiveness, and accuracy of public document transfers, retrievals, and disposals as mandated by the Code of Virginia and County of Fairfax Board of Supervisors. Bar code/scanning technologies for County Archives and Records were implemented. Work was completed in April 2004.
Document Mgt & Imaging – Sheriff's Office	This project improved the efficiency, effectiveness and accuracy of inmate records management by eliminating transfers to County archives and providing critical decision-making documents online. Imaging technology was used to benefit internal and external users including bondsmen, lawyers, judges, magistrates and local law enforcement agencies. Project was complete in FY 2004.
Electronic Accounts Payable (EAPS)	The EAPS project replaced the county's decentralized accounts payable processes by implementing proven imaging, e-signature, and workflow technologies thus improving internal controls and analysis of the County's accounts payable processes and reducing reliance on paper intensive processes. All county agencies were trained and transitioned to EAPS invoice processing within the first quarter of FY 2010.
2G70-013-000, 2G70-014-000 Health Department Information Systems (IT0015)	
Health Department Information System	The core AVATAR project provided a central database of information for management needs of the Fairfax County Health Department. The system provides operational efficiencies as well as ensures compliance with privacy laws and County regulations. The core project was complete in FY 2009.
Laboratory Information System	The project implemented a COTS Laboratory Information System that upgraded existing processes, enabled more efficient interaction with health care providers, and avoided the escalating cost of contracted laboratory services.

Project Name and Number	Description
IT0024 Public Access Technologies*	
Public Access Technology – Kiosks	The multimedia kiosk was one of the key technologies in the e-government strategy deployed by Fairfax County to assist citizens with access to government information and business transactions in convenient location. The kiosk application known as the Community Resident Information Services (CRIS) provided the public easy access to applications running on the county's web site and IVR applications as well as regional information. Due to budget constraints and availability of more widely used e-government channels and internet capabilities, the KIOSK program was retired in FY 2010.
Electronic Payments	This Project implemented a uniform payment process for constituents and consolidated bill presentment and payment processes.
EAN Emergency Alert Network	Successful implementation of an Emergency Notification and Wireless Communication System, Emergency Alert Network (also referred to as the Roam Secure Alert Network) to alert the public about emergency events in Fairfax County.
2G70-016-000 Correspondence Tracking and Management System (IT0022.9)	
Correspondence Tracking and Management System	This project provided enhanced communication between county staff, departments and agencies. The system provides an integrated approach to service delivery enabling users to link to other areas within the database, as well as extended outside the IQ system through scheduling scanned images, e-mail, fax, and incoming/outgoing postal mail. The project enables agencies to automate business processes and work flows, reduce duplication of effort, and share information. These benefits are amplified by the delivery of a seamless constituent interface and enhance customer service.
IT0025 Adult Detention Center Information System (SIMS)*	
Adult Detention Center Information System	The Sheriff's Information Management system provides an integrated system that reduces operational costs, improves integration of criminal justice systems and data, and enables improved decision making. The SIMS project offers enhanced functionality for booking, prisoner classification, medical and forensic programs, community corrections, court services and information needs. SIMS was implemented in February 2008.
2G70-021-000 Circuit Court Technology (IT0039)	
Circuit Court Technology	Past accomplishments include development and deployment of the Court's Land Records Recording System, including document imaging; implementation of the Court Public Access Network (CPAN) retrieval system, use of an automated jury management system to administer 45,000 potential jurors annually; deployment of a case management system to control the administration of the Court's judicial case load; development and implementation of paperless probate processing; development and implementation of a streamlined marriage license process which utilizes scanners to import data from customers' operator licenses; implementation of electronic docketing display directing public to the assigned courtroom.

Project Name and Number	Description
2G70-024-000 Human Resource Information Systems (IT0043)	
Human Resource Information Systems	Enhancements to the human resource operations include improved reporting capabilities for agencies, and improved look and feel for a variety of functions like time sheet, and on-line pay advice, and the implementation of a succession planning and knowledge management suite, and on-line benefits enhancement. As of FY 2009 future progress in the human resource systems area will be incorporated in the FOCUS project (IT-000001-001 (IT0079)).
IT0047 Upgrade Commodity/Service Codes*	
Upgrade Commodity/Service Codes	This project replaced the County and Fairfax County Public School's (FCPS) outdated and proprietary stock numbering system with an updated system used by Fairfax County, FCPS and other government vendors. The new numbering system enabled the merging of both the County's FCIN system and FCPS stock numbering system into one application.
2G70-025-000 Fire and Rescue Incident Reporting and Records Management (IT0048)	
Fire Records Management	In FY 2009 the transition from the web based Fire Records Management System (FRMS) incident reporting system to the client\server FRMS incident reporting system and integration of the new incident reporting system with the new CAD system was completed. This change in application platform better positioned the Fire and Rescue Department to implement additional modules of the FRMS suite.
Electronic Patient Care Reporting System (ePCRS)	The ePCRS was implemented in FY 2008 with the deployment of a tablet based computer system for all Fire and Rescue units. Patient treatment information is collected directly on the tablet computer while the crew members provide emergency medical care. The patient information is linked via secure wireless service to the Electronic Patient Care Reporting Servers for direct storage. The process is fully HIPAA compliant and digitally capturing the patient information reduces the overall time required to complete the required reporting process through the elimination of duplicate processes (paper and pen reporting) and provides more accurate information for better record keeping.
Incident Reporting and Records Management Systems (FRD)	The FRD Incident Reporting And Records Management Project is part of the multi-system, multi-phase initiative which successfully delivered a unified technology platform across public safety agencies in Fairfax County. This project replaced the legacy CAD system with a new, fully integrated and interoperable Computer Aided Dispatch system. The CAD system is integrated with the Fire Records Management System (FRMS) and Electronic Patient Care Reporting System (ePCRS).
2G70-026-000 Public Service Communications Replacement Project (IT0050)	
Public Service Communications Replacement Project	In FY 2007 this project replaced the two-site radio network with a seven-site, 800 MHz trunked analog radio system. The Public Service Communications System provides two-way radio communications for all County non-public safety agencies as well as the Fairfax County Public School Transportation Department (school buses), FASTRAN and the Fairfax County Water Authority. The completed system provides adequate call processing capacity and area coverage to more than 90 percent of the area within the jurisdictional boundaries for Fairfax County and provides a fully independent backup radio system for public service agencies.

Project Name and Number	Description
2G70-030-000 Fairfax Inspections Database Online (FIDO) (IT0055)	
Fairfax Inspections Database Online	The original FIDO project completed the replacement and consolidation of several platform-specific land use management systems into a single enterprise solution that supports land use permit issuance, inspection, and code enforcement operations. FIDO also supports ninety different permits and land use complaint types as well as a web portal to allow citizens and businesses to query the status of a permit applications and code enforcement complaints.
2G70-034-000, 2G70-035-000 Courtroom Technologies Pilot and Wayfiding Project (IT0056)	
Courtroom Technologies Pilot and Wayfiding Project	In FY 2005 this project successfully developed a prototype courtroom as a guide for future courthouse expansion and renovations to determine and assess future courtroom technology needs and requirements of Fairfax County Courts. The project identified court and courtroom technologies appropriate for the expansion and technology operations of the courts. In FY 2011 this project completed the installation of electronic docket displays in all three Fairfax County courts as well as public information monitors strategically placed at the Information Desk at the main entrance to the Courthouse. Integration of the county's docket display system with Virginia Supreme Court was also successfully completed in FY 2011.
IT0057 Community Policing*	
Community Policing	Timely and accurate information flow is critical to a successful community policing program. This project expanded that capability of officers to access e-mail and prepare and present useful information to citizens.
IT0059 Office of Children- Wireless Permitting*	
OFC – Wireless Permitting	The project provided Child Care Specialists and Fire Department Inspectors with wireless tablets for use during home visits, and enabled successful transfer of inspection information into the Office for Children information system.
2G70-038-000 IT Security Projects (IT0060)	
Identity Management	The project implemented a standardized and centralized secure authentication and authorization platform for access to web based system applications.
Security Monitoring and Audit Control	The project implemented an enterprise security monitoring and audit control process on an enterprise-wide initiative for access control and auditing on critical Windows and UNIX operating systems platforms.
IT Security – Intrusion Detection	The project implemented a modular network infrastructure for incorporation of the necessary levels of security to be embedded in each specific functional area. Critical Internet Protocol data segments were outfitted with intrusion detection sensors to ensure data integrity. This architecture mitigates security vulnerabilities, yet provide the necessary flexibility to meet County business needs.

Project Name and Number	Description
2G70-039-000 Police Records Management Projects (IT0062)	
Evidence Tracking System	In FY 2006 the Evidence Tracking project enabled the cataloging, storage and security of evidence collected by the Police Department (FCPD). The evidence tracking system generates a barcode label for every item of evidence presented for storage. Barcode readers can be used to inventory the evidence to perform audits of evidence management practices.
Police Records Management System – I/LEADS	The I/LEADS Project was part of the multi-system, multi-phase initiative which successfully delivered a unified technology platform across public safety agencies in Fairfax County ensuring a unified technology platform that seamlessly shares and processes data across public safety functions and leverages available technologies. I/LEADS increased the Police Department's ability to prevent, respond to, manage, and analyze situations that threaten the safety and property of citizens.
IT0063 Facilities Space Modernization*	
Facilities Space Modernization	This project successfully upgraded the County's Conference Room Center and meeting rooms with advanced and automated conferencing, A/V and meeting capabilities. The project was completed in FY 2009.
IT0067 Stormwater Maintenance Management*	
Stormwater Maintenance Management	This project consolidated a number of standalone databases used for work-orders, complaints, and infrastructure inventory into one integrated and streamlined maintenance management system. The new system reduced operational costs, enabled integration of agency data, and reduced reliance on paper intensive manual processes while improving accuracy and better access to information. This project was completed in FY 2009.
IT0068 Home Occupation Permitting System*	
Home Occupation Permitting System	In FY 2007 this system provided increased efficiency for processing Home Occupation Permits and enabled staff to access permits for more effective and efficient operations and improved customer service.
IT0069 Integrated Housing Management*	
Integrated Housing Management	The housing and Community Development's housing management system was complete in FY 2010. The project redesigned and consolidated multiple systems and databases, eliminated manual data entry and streamlined HCD requirements for compliance with federal reporting requirements.
2G70-067-000 Court Scheduling System (IT0071)	
Court Scheduling System	The Court Scheduling System (CSS) allows court administrators and the Police department to coordinate traffic court dates in order to level out and evenly distribute daily court dockets in the General District Court. CSS produces reports to help manage and resolve scheduling issues between the Court and the Police Department. Additional functionality was added to CSS to streamline officer court dates, and allow the Fairfax County Police Department to enter criminal and juvenile cases court dates into the system. By FY 2010 work was completed to enable court users to manage court schedules for ticket writing groups external to Fairfax County. In FY 2011 the Court Scheduling System successfully implemented an interface with the Supreme Court of Virginia's Case Management System for District Courts which enables the court to manage court dockets in real time.

Project Name and Number	Description
2G70-042-000 Integrated Parcel Life Cycle System (UDIS) (IT0073)	
Integrated Parcel Life Cycle System	In FY 2008 this project replaced the obsolete Urban Development Information System (UDIS) and created a cross-functional data repository to better harness the value of the land parcel information the County maintains and to make that information more accessible across County agencies. This updated system satisfies an ongoing requirement for the Council of Governments and County agencies.
IT0074 Data Analysis Reporting Tool (DART)*	
Data Analysis Reporting Tool	This project provided an integrated data warehouse for data from the County's legacy financial, procurement and payroll systems. The system provides enhanced internal reporting capabilities. The DART project roll out was complete in March 2008. The new FOCUS project will use DART to migrate data into the ERP system.
IT0076 Interactive Web Intake Program*	
Interactive Web Intake Program	This project provides support for the interactive web-intake program at the Department of Housing and Community Development that provided the public access to services 24/7, applications in multiple languages, eliminated manual processes and redundant paperwork. The project was complete in FY 2010.
2G70-043-000 Courthouse Expansion Technology Project (IT0078)	
Courthouse Expansion Technology Project	This project completed the planning, design and implementation of modern courtroom technologies for the new Fairfax County Courthouse. The Courtroom Technology Management System successfully integrates modern courtroom technologies into traditional courtroom activities. The systems provide for integrated and electronic evidence presentations, video conferencing for arraignments and remote witness testimony, real time court recording, integrated assistive listening and interpretive system, as well as judges' control of courtroom technologies from the bench. All high technology courtrooms include multiple flat screen monitors allowing the judge, jury and gallery to view unobstructed presentations of evidence. In FY 2012 this initiative has moved into an operational phase for maintaining and managing complex courtroom technologies in the new courtrooms as well as continuing work on renovation of twenty six existing courtrooms.
IT0080 Juvenile and Domestic Relations Court (JDRC) Residential Services Intake System (RSIS)*	
JDRC Residential Services Intake System	In FY 2009 a new RSIS application using .NET and SQL technologies was developed and implemented to meet current County standards in order to provide court staff easy access to information contained in a database of residential placement information.
IT0081 Housing Management Software Upgrade*	
Housing Management Software Upgrade	In FY 2009 this project updated existing Department of Housing and Community and Development (HCD) software used for management of its portfolio of properties and for financial reporting. The upgraded software is a full-featured, financial accounting package that includes management and compliance tools for all federally funded housing programs, as well as for commercial and tax credit properties.
2G70-044-000 Land Use Information Accessibility Initiative (IT0082)	
Land Use Information Accessibility Initiative	Initiatives streamlined constituent access to relevant land use information, enhanced navigation and provide more intuitive and web-based visualization tools for understanding the spatial environment. These efforts exhibit Fairfax County's commitment of make land use process and information more open, inclusive, and citizen-oriented. These projects further enable citizens' awareness of land use information impacting their neighborhoods and facilitate citizen participation in the process. Information on these systems is available 24/7 over the County's website.

Project Name and Number	Description
2G70-045-000 Public Safety Architecture Modernization – ICAD (IT0083)	
Public Safety Architecture Modernization	The Public Safety Architecture Modernization project provides the underlying infrastructure components and shared capabilities required for an integrated, interoperable public safety system. This project also supports operational components of a CAD and RMS including network infrastructure, and adopting standard Geographic Information System (GIS) to meet public safety requirements. In November 2009 implementation of a new ICAD system for Fairfax County public safety agencies was successfully completed.
2G70-049-000 Loan Processing System Replacement (IT0085)	
Loan Processing System Replacement	This project replaced HCD's twenty three year old Loan Processing System with a COTS package that facilitates current loan processing and tracking needs, as well as connectivity to the Department of Finance for reporting and compliance. Through the years both the functionality and technology associated with the existing system have become dated and the need for a more robust loan processing system has grown. Implementing a current loan servicing system that utilizes web technology to properly account, service and report on the excess of \$46 million in loans in the HCD portfolio will allow for enhanced revenue and compliance with federally mandated HUD programs.
2G70-051-000 Data Reporting Project - DFS (IT0089)	
Data Reporting Project	With the concurrence of all stakeholders, existing balances of \$400,000 from this project were reallocated to fund the newly established high priority Human Services Data Repository Project (3G70-077-000). This project was not activated.
IT0087 ParkNet Security Upgrade*	
ParkNet Security Upgrade	This project replaced and upgraded the Park Authority's legacy IT hardware and software and brought the systems into compliance with Payment Card Industry Standards (PCI) and the County's infrastructure standards. This initiative ensured conformity with the county's current IT infrastructure and security standards as well as compliance with PCI mandates for accepting credit card payments over the internet and IVR. This project was completed in FY 2011.
2G70-038-000 Telecommunication Modernization Project	
Telecommunication Modernization Project	This project completed implementation of Fairfax County's strategic goal of providing Voice over IP services over the county's fiber optic network – INET. The strategy included a scalable architecture supporting a variety of county sites and agency business requirements. The project successfully completed implementation of a flexible enterprise class voice platform. The new voice platform provides the foundation for wireless integration and incorporating a variety of smart mobile devices. This enterprise class voice platform touches over 16,000 telephones, fax machines, private lines and devices used by county employees.
IT-000001 Fairfax County Unified System - FOCUS (IT0079)	
Fairfax County Unified System – FOCUS	The software procurement was completed in the summer of 2009 with the purchase of SAP software. The project began implementation activities in summer 2010; the financial management and procurement system (Phase 1A) went live in November 2011. Project Phase 1B (enhanced supplier management functionality) completed in FY 2013, and Phase 2 (county human capital management) went live June 2012 for the first payroll run in FY 2013.

Project Name and Number	Description
IT-000003 Data Loss Prevention	
Data Loss Prevention	DLP provided the means to configure warnings and prevent users from copying sensitive data to unauthorized CD/DVD's or USB drives, which in turn could then be physically taken out of the control and protections of the county's endpoint security solutions. The implementation of Data Loss Prevention resulted in reduced compliance costs, auditing costs and the Total Cost of Ownership. This project was completed in 2014.
IT-000004 Emergency Management Portal	
Emergency Portal Management	This application was developed and implemented in house to allow first responders in the field to report data about facility conditions, road closures and other pertinent information to personnel at the EOC via a smart device, workstation or Mobile Computer Terminal (MCT). The data is collected in a highly configurable database allowing the flexibility to adjust the data collected based on changing conditions and requirements. Data is then structured in a way to allow GIS to consume the data and graphically represent conditions on a map. This project was completed in 2014.

*Depict project numbers in FAMIS whose numbers did not get transferred over to the new system (FOCUS)