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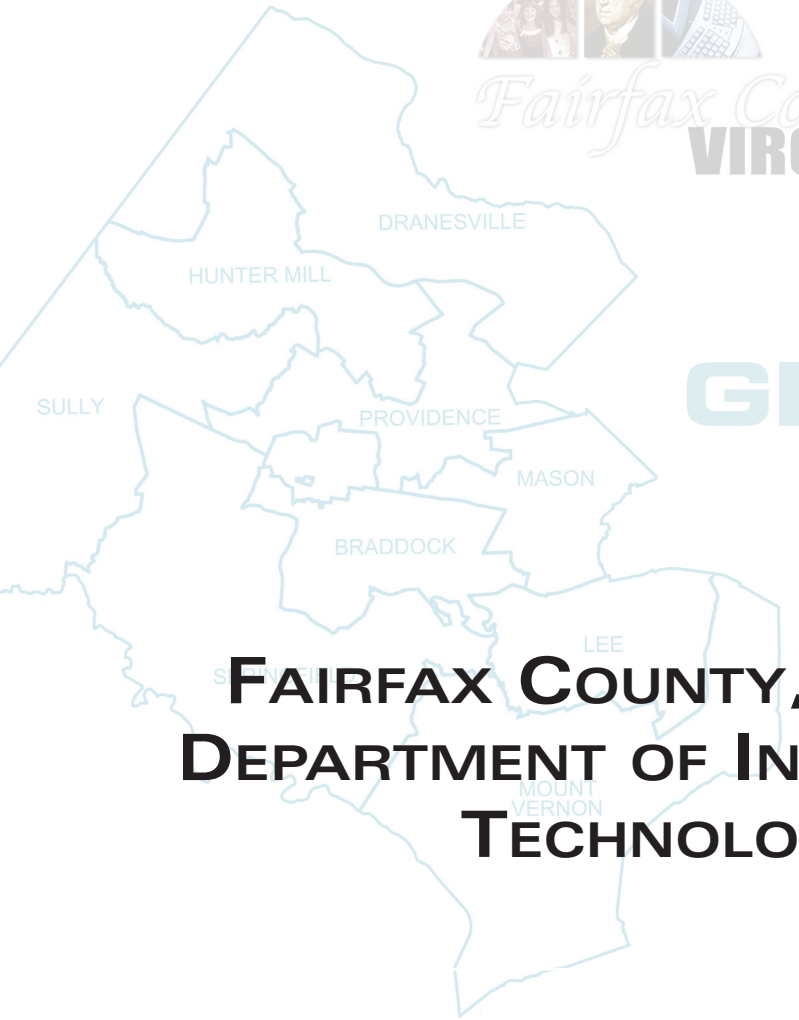
Fairfax County VIRGINIA



GIS

Fairfax County, Virginia Department of Information Technology

FY 2014 Information Technology Plan

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Fairfax County, Virginia
Department of Information Technology

FY 2014
Information Technology Plan

Fairfax County
VIRGINIA

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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, and tools that support a variety of needs and diverse portfolio of systems. 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 county priorities such as, mobile apps, county worker mobility and telework, private municipal 'cloud' capabilities, green and environmentally sustainable IT initiatives, and on-going productivity and reliability improvement such as self-service opportunities, cyber security and privacy, and maintain a supportable and resilient infrastructure. Fluid Investments in technology innovation enable these as well as executive leadership goals and county agencies' strategic plans. Emphasis is also placed on 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 plan summarizes the county's underlying principles for IT Governance: (Section 1); Strategic Directions and Initiatives (Section 2), Information Technology Projects (Section 3); Management Controls and Processes (Section 4); and Information Technology Architecture (Section 5). The plan describes adopted technology investments that accomplish identified goals and objectives; provides status of ongoing project accomplishments; identifies resources required for implementation; and states the return on investment benefits projected by the sponsors of the projects. Projects are linked to agency sponsor strategic plans and the Board of Supervisor's Goals and Vision Elements.

The modernization efforts described in this plan are primarily funded in the Information Technology Fund – Fund 100-C10040 (formerly Fund104), and Fund 400-C40091 (formerly Fund 120) (E-911). 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, augment investment funding capacity, and provide additional opportunities to meet innovation goals. Governance, architecture, and infrastructure for supporting IT projects 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 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 2014 Adopted Budget Plan.

Information Technology Goals

In recognition of the need to link the county's Information Technology efforts more closely to its business goals the executive management of the county established the county-wide Information Technology (IT) goals, determining priorities within the context of Board of Supervisor goals and priorities, sustainability and the service demands that must be met within county resource availability and opportunities. The formulation of the goals provides a framework by which the allocation of critical resources are directed, categorized and aligned with county goals. The goals are reviewed annually for applicability and relevance against new demands on county business requirements and 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

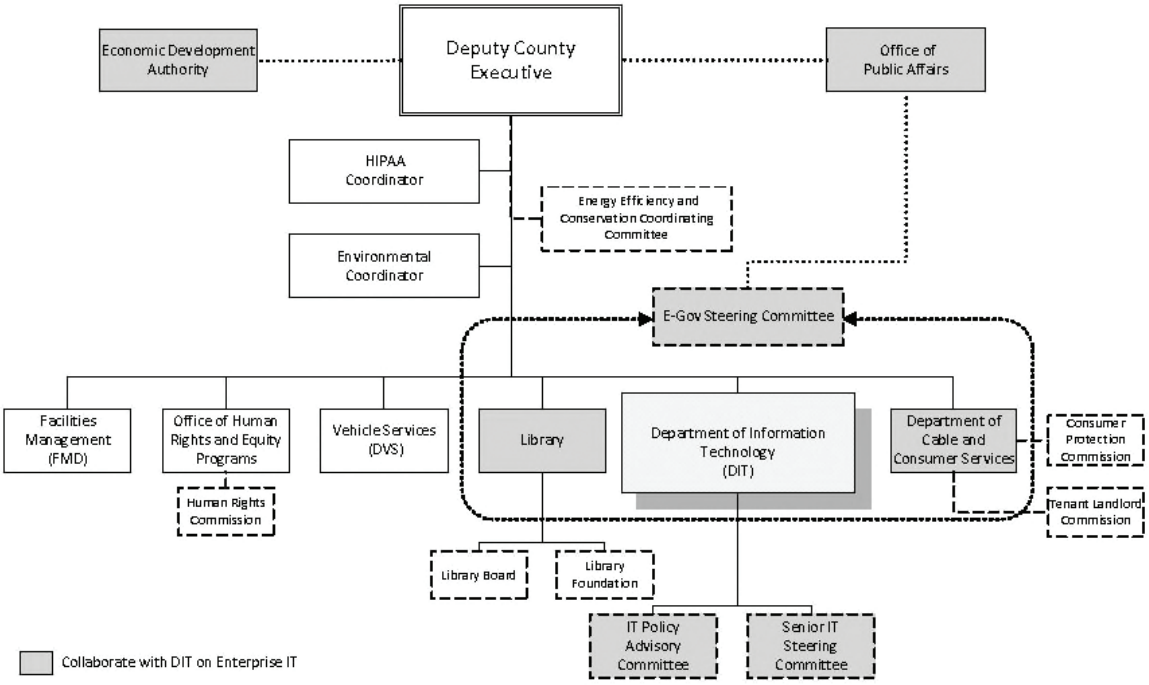
1. Technology Organization and Governance

Technology is managed as an enterprise capability in Fairfax County. The Department of Information Technology (DIT) is responsible for strategic direction of information technology and communications systems, and support services on an enterprise-wide infrastructure, architecture framework and standards for most systems. County agencies have a limited number of technology staff that may directly support agency business specific point solutions or industrial systems (although many of these are beginning to be incorporated on the enterprise network), and provide localized desk-side user support. Agencies' IT staff matrix look to DIT for direction and assistance in implementing business systems. 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 reports to one of the Deputy County Executive (DCE) who has responsibility for a set of related departments and staff functions that either directly or indirectly participates in the overall direction of innovation and enterprise information policy, as well of other county-wide operational support agencies (this DCE is one of four reporting to the County Executive). The DCE directs a broad range of information related agencies' functions, programs, and county-wide initiatives, leading efforts that integrate with or enhance the mission of delivering strategic technology initiatives and open government. This model groups the county's information and technology programs and services under a single authority to provide interagency coordination for efficient and effective IT enabled services.

Collaboration among the 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, Environmental Coordinators, and the Office of Public Affairs (OPA) deliver programs that contribute to the county's 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 e-Gov group to develop a comprehensive communications policy and message strategy and to ensure the integrity of content for published information served through the county's e-Gov programs and adopted WEB n.x internet capabilities and social 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. This DCE group



also includes Department of Facilities Management, who contributes in ensuring IT facilities and necessary utilities, and the Department of Vehicle 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.

In working with 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 the Department of Information Technology 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 Institutional Network (I-Net) 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 conferencing rooms in the government center, coordinating with DIT in integration with the county's network and security teams.

The mission of F**airfax 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 to residents.

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. Additionally the DCE is responsible for the Office of Human Rights and Equity Programs which assists with IT strategy in relation to ADA compliance and related regulatory consultations.

IT strategy and support are also important in other DCE initiatives such as arts, 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 the DCE 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. This committee was transferred to the DCE group in FY 2011.

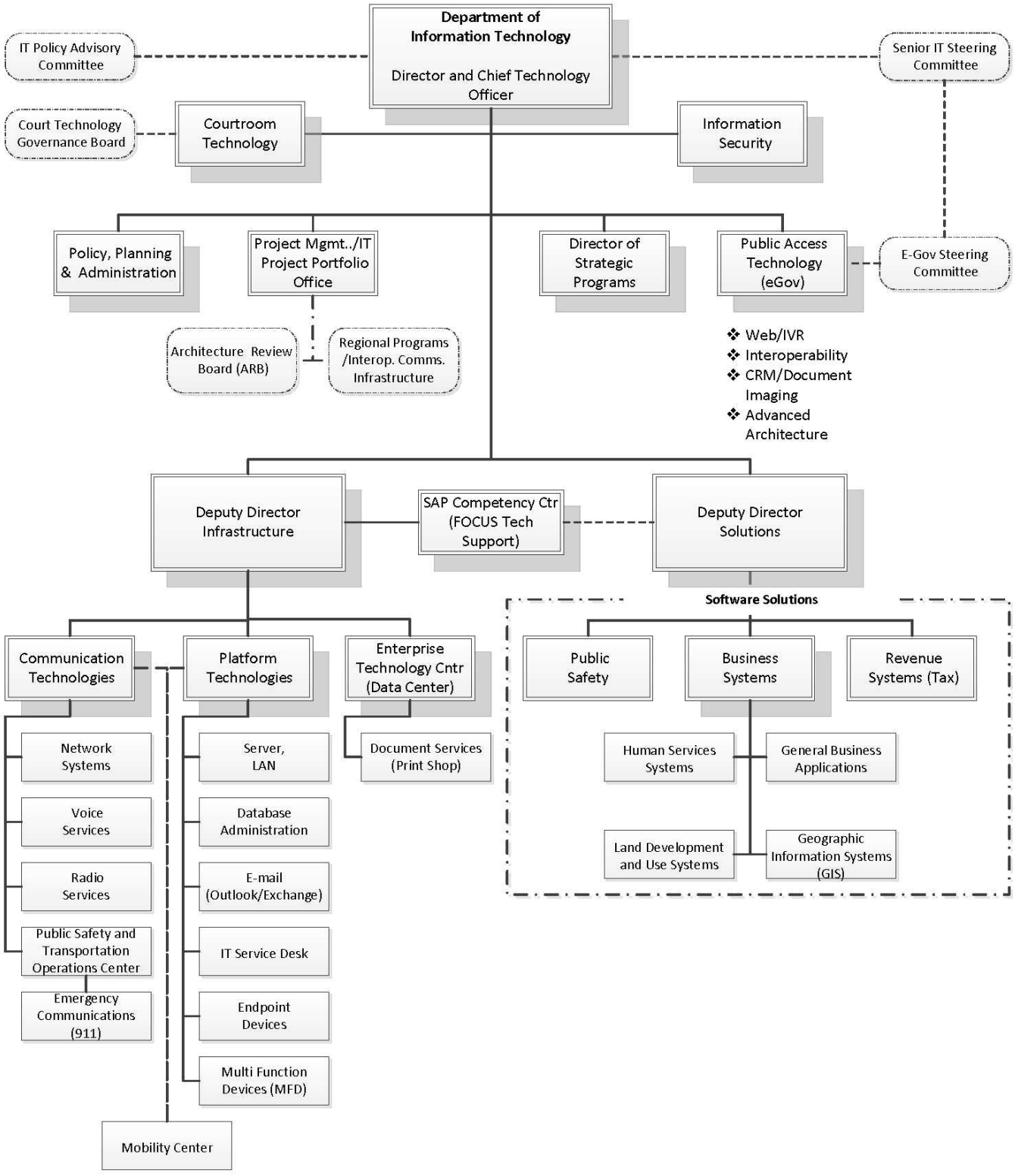
1.1 Department of Information Technology Organization

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 and effectiveness. Depending on the initiative, DIT is capable of designing, managing, and implementing most aspects of information technology solutions, and supporting infrastructure that enable county agencies to effectively deliver services and information to citizens and the community. To provide focus and direction to staff within the department and to help plan for the future, an overall mission for technology was established with eight goals. The mission and goals statements were developed with input from staff and the Senior IT Steering Committee regarding important issues facing the department.

Fairfax County continues to make the necessary investments in information technology hardware and software, which through careful planning, cooperative business and technical execution provides its citizens with a return on investment in the form of improved services. The department's goals were established to 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. This includes consideration of 'cloud' and other hosted capabilities that make sense for Fairfax based on the architecture, cost, and risk implications. 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 charge as the steward of county information systems and data, and agencies are responsible to coordinate their requirements with DIT.

The organizational structure of the Department of Information Technology (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 systems, 'cloud' architectures, green IT, mobile apps, and

Fairfax County
Department of Information Technology
Organizational Chart



*FY2014 Functional Version

wireless hand-held devices, as well as platforms that support cross agencies and enterprise class solutions and software applications (see Section 4). These information technology capabilities have become crucial components in the day-to-day operations of almost all areas of County government, and the increasing complexity and sophistication of these systems require well-trained technologies end users and support staff.

DIT is organized into IT discipline subject matter expert groups that support enterprise-wide systems including messaging applications (e.g. e-mail, calendaring and productivity suite applications), 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 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 the Office of Public Affairs in overall management and execution of web-content and social media, as a 'One Web Team'.

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 Commonwealth of Virginia 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) manages hardware, communications and network platforms enterprise-wide, integration tools, enterprise messaging applications, desktops and 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 help desk service. 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 MFD 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 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 the 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, inter-operability, 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 Pace 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.

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 (NEIM) 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.

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** attending 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. 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 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 plans and makes 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 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
- Director, Public Access & Advanced Technologies, DIT
- Director, Office of Public Affairs
- Deputy Director, Office of Public Affairs – Communication
- Director, Web Content-OPA
- Director, Department of Cable and Consumer Services
- Director, Fairfax County Public Libraries

The Steering committee:

- Considers updates to the Public Web Site content Policy PM N0. 13-04
- Creates additional e-Government policies and procedures as necessary
- 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 for discussion
- 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 affective 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
- Deputy County Executive
- 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 Sherriff
- General Manager of the Public Safety and Transportaion Operations Center (PSTOC)

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

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

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 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 FOCUS Steering Committee

The Fairfax County Unified System (FOCUS) is directed by a steering committee comprised of senior county and school officials, including directors of core financial, procurement, budget, human resource and information technology agencies that will consider business and policy changes that facilitate the goals of the initiative and leverage the FOCUS system. The steering committee is designed to make decisions regarding changes in organizational policy and procedures and fosters the value of the integrated system and on-going systemic opportunities the solution can enable.

The Steering Committee is chaired by a Deputy County Executive as Executive Sponsor and the Chief Financial Officer, and is comprised of the Directors of Human Resources, Finance, Information Technology, Management and Budget, and Purchasing and Supply Management, as well as the Fairfax County Public Schools' Assistant Superintendents for Financial Services, Information Technology and Human Resources.

1.8 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
- Land Development Systems Steering Committee
- E-Health Committee
- Consolidated Volunteer Management System Coordinating Committee
- Human Services Leadership Team
- Audit Steering Committee

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

1.9 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
- Council of Governments CISSO Committee
- Council of Governments Emergency Preparedness Council
- 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
- Federal IT Security Symposium Advisory Board
- COVITS Board (Commonwealth of Virginia IT Symposium)

SECTION 2

STRATEGIC DIRECTIONS AND INITIATIVES

STRATEGIC DIRECTIONS AND INITIATIVES

FEATURED IN THIS SECTION

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 e-Government

The e-Government initiative is a foundational program supporting the county's goal of a "government without walls, doors, or clocks". The comprehensive strategy is the foundation for the County's Open Government, Transparency, Customer Service, and Public Engagement strategies, as well as enabling county agencies' operational effectiveness goals, mobile workforce and Continuity of Operations. The e-Gov program develops the architecture for both the public channels and the internal WEB portals.

The e-Gov program includes an inclusive set of channels, using enabling technology, policy and processes that integrates the Fairfax County Web Site www.fairfaxcounty.gov, WEB 2.0, 3.0 and beyond and social media capabilities, Interactive Voice Response (IVR) platforms, mobile applications, Cable TV, the county's Public Access sites in Libraries and Access Fairfax sites (the highly successful CRiS Kiosk program was retired in 2011 given the wide public adoption and commercial use of the WEB and mobile applications). The e-Gov strategy incorporates the county's Communications Plan for comprehensive and cohesive access to information and services that span over fifty agencies. In addition to the on-going efforts 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.

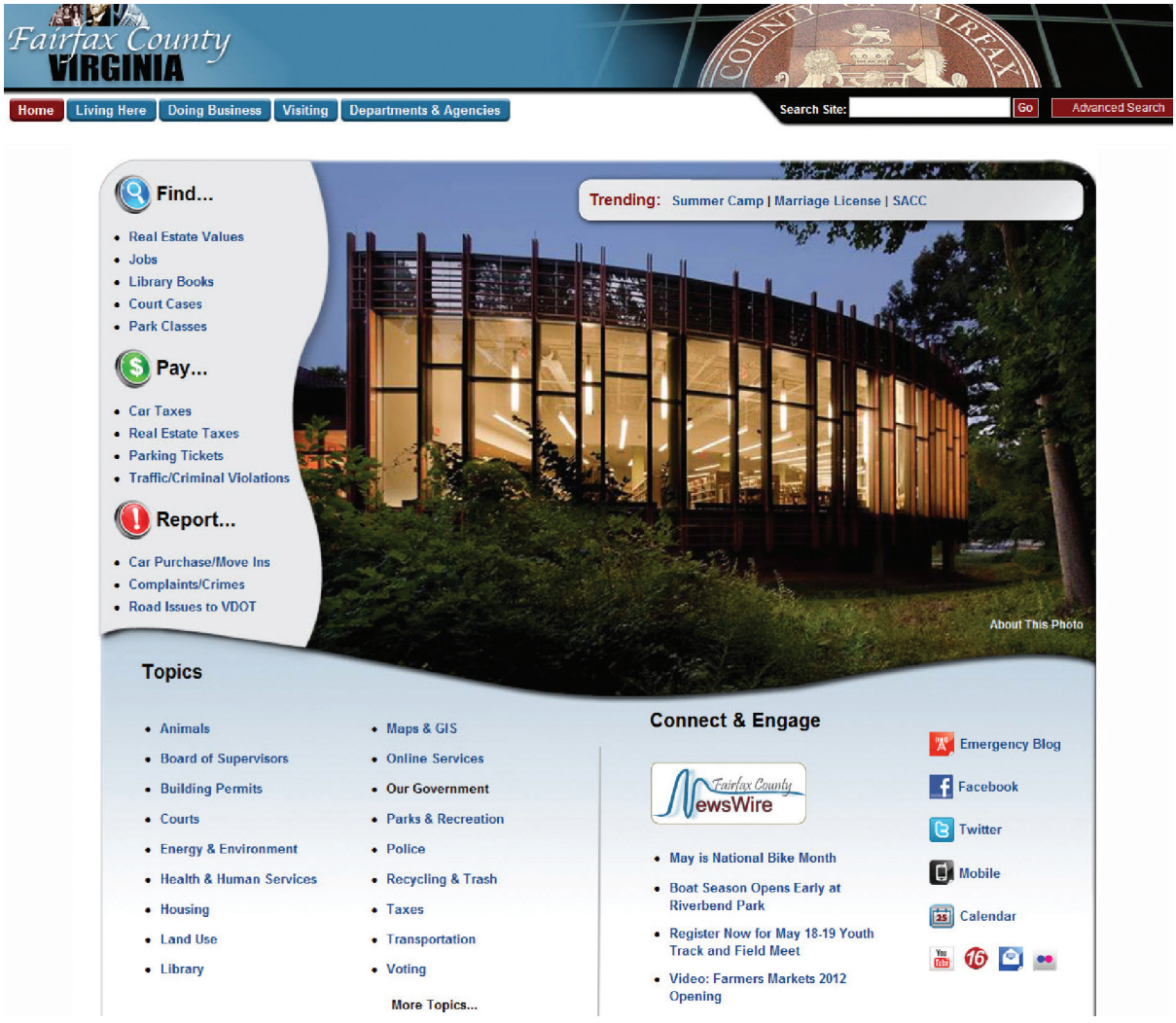
The county has achieved much success and acclaim for its e-government focus in integrating the WEB and IVR platforms that offer a wide variety of channels for complete on line public access capabilities to services and programs, and incorporates social media capabilities in a thoughtful way that enhances service's needs. In FY 2014 the county will continue its efforts to add new services to the e-government channels, including enhanced communications, new transactions, e-payments, enhanced search and integrated social media, blogs, and WEB 2.0 and 3.0 capabilities, and public engagement, transparency, enhanced access, emergency management. Fairfax County continues to incorporate access for all and meet ADA compliance

goals. The e-Gov program will continue to work with the Commonwealth of Virginia, regional partner municipalities, and federal government agencies in interoperability of common service portals and developing web services standards to enable cooperative access and seamless integration of information and services regardless of the origin or the source.

Some of the e-government initiatives include applications such as Special Needs Registry, Social Needs Registry, and Library Audio Books. 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.

Periodically a comprehensive review is conducted of the WEB-site 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 Customer Services and Engagement Initiatives.

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 Web site. 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 Web site is also a part of the county's **"Going Green Initiatives."**



*picture of Dolley Madison Library, pictures rotate.

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 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 starting in FY 2010 and FY 2011, and is a regular part of the budget development process which includes extensive outreach through the use of social media platforms such as Facebook, Twitter and YouTube. This program also received national recognition by Public Technology Incorporated (PTI). Over twenty- five county agencies have deployed a variety of Social and New Media apps to support their constituent programs and services.

Multiple tools assist interested citizens learn more about county's operations, programs, and activities. The county has long made it possible for the public to subscribe to information published through e-mail (http://www.fairfaxcounty.gov/email/lists/), and is increasing the breadth of available information through various e-channels. The county provides RSS feeds (http://www.fairfaxcounty.gov/rssfeeds/), which allows users to have information sent to them through tools explicitly designed to track published information. Access to information is also expanded through county podcasts (http://www.fairfaxcounty.gov/podcasts/). Three county-wide pages have been launched on leading social network sites:

- FaceBook (http://facebook.com/group.php?gid=7901829756 – account required),
- Twitter (http://twitter.com/fairfaxcounty) and
- YouTube (http://www.youtube.come/user/fairfaxcountygov). Posting content on these sites allows the county to access an expanded, and potentially younger, audience than it has in the past. The Office of Public Affairs maintains the content for these sites, which is often repurposed from existing material.

The county's Get Fairfax County campaign has been enhanced to incorporate NewsWire (http://www.fairfaxcounty.gov/news/) 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.

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 (ADA) by passing through the county's automated compliance checking tool.

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. By 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. Samples of the mobile apps deployed include:

- **Alerts:** Offers the latest updates about major incidents or weather events including text/email 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.
- : 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 online catalog, get hours, locations, check reviews, place holds for pick up, modify hold requests, check account status, and renew material. Additionally, 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 citizens 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), and 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/.

In FY 2014, emphasis on citizen/community engagement through multiple communication channels harnessing various Web based technologies will take center stage and help empower the public's connection with the county. As part of the citizen/community engagement initiative, the county's homepage on the public website will be refreshed making it a more visual, intuitive, citizen-centric, and topic driven page. Using responsive design and adaptive approach, the same design and features will be translated to the mobile platform as well. Continuing to build new online service transactions and e-payments, adding additional interactive features, improving navigation and synchronizing content from disparate sources, enhancing search functionality and developing more native mobile application for public consumption will be the key focus of E-Gov. DIT will continue enhancements to the e-government channels for compliance with Section 508 for accessibility; and maintain the ultimate goal of facilitating the delivery of integrated information to citizens via multiple platforms along with implementation of additional web search capabilities. The on-going strategy includes incorporation of more interactive input on WEB site usability and metrics, and WEB 3.O with focus on metadata needed for on-line intuitive search and intelligence.

Customers Served

IVR: 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 Fairfax County Unified System

In 2009, Fairfax County government and school system 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 under a single application platform that has the flexibility to meet current and future requirements of both entities. A major investment, the project provided an opportunity to transform administrative operations, enhance use of information for reporting and analysis, reduce overlapping systems and processes, and enable greater value/cost efficiencies long-term. This major initiative also mitigates the risk that antiquated and disjointed systems pose for system failure, incomplete data, and operational integrity. The project is known as FOCUS (Fairfax County Unified System). The system has been in production with its initial base-line core functionality since 2011. Planned non-core developments are on-going that support business strategies such as integrated performance management, e-recruiting, employee development goals, as well as budget formulation, projections, and publication, and enhanced reporting and business analytics for decision-making. The overall solution set integrates with the county's e-government strategy, transparency goals, telework objectives, COOP (Continuity of Operations Planning), and is the foundational corporate system for county business transformation and efficiency opportunities.

A governance body of senior officials of the county and school system stakeholder agencies developed the optimal strategy to take advantage of best practices incompliance, security, e-commerce, and government operational evolution. FOCUS modernizes the underlying enterprise technology architecture with high availability virtual servers; enterprise identity management that provisions secure user access across the county and schools network infrastructure environments; self-service portals for employees to manage their personnel record information, perform transactions, and for public transparency; business intelligence for flexibility in queries, reports, dashboards and business analytics; and integration in financial processing with digitized documents and work-flow, and automatic payment of invoices for received goods and annual payment obligations. The technology also provides the opportunity for rapid deployment of new requirements and mobile applications, further enhancing the county's telework and COOP initiatives. While the main project is complete, on-going work on expanded supplier self-service functionality, performance management and e-recruiting for county government, and transparency as well as continuing opportunities to leverage system capabilities.

2.3 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 and related products that provide the foundation for ongoing integration of GIS into county operations as well as enabling new developments. 3-D viewing is the most recent spatial technology. Implemented in 2010, 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. Figure 1 shows a Virtual Fairfax view of Tyson's corner along with GIS integrated directly. The colored surface demarks the development intensity zones around the Metro stations under construction. The zones determine maximum possible building height. Virtual Fairfax has proven popular as usage increased over 400% in 2012 vs. 2011 and has been maintaining that usage level since 2012.

Modifications were 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 enable customization of business specific content. If these versions are implemented, they will retain the ability for users to access 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 worked with other agencies that have expressed interest in a co-branded site, though 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 plans to update the 3-D buildings and base imagery of those areas using 2013 Pictometry imagery. Additional areas with 3-D buildings will also be added.

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 and many others. It also serves as the source of the data used to construct 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 first acquisition under the new contract is planned for 2013. Figure 2 is an example of oblique imagery of Reston Town Center. Note the view of the side of the buildings.

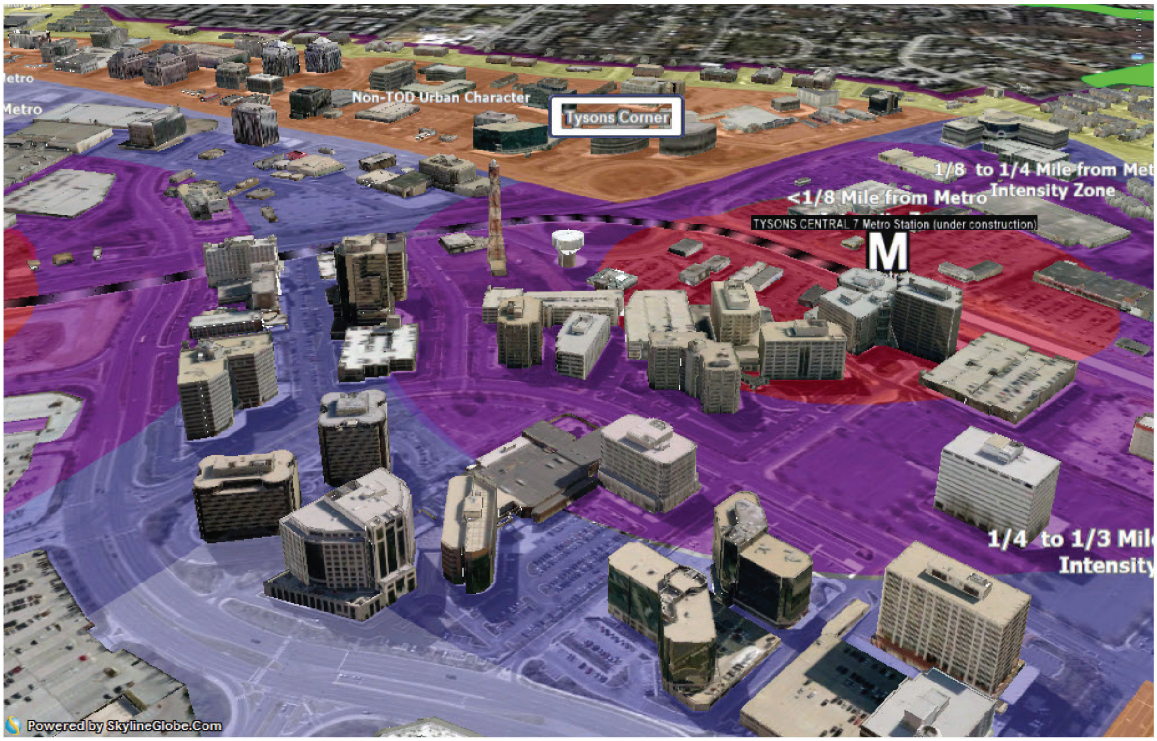


Figure 1: Virtual Fairfax View of Tyson's Corner including development intensity zones.

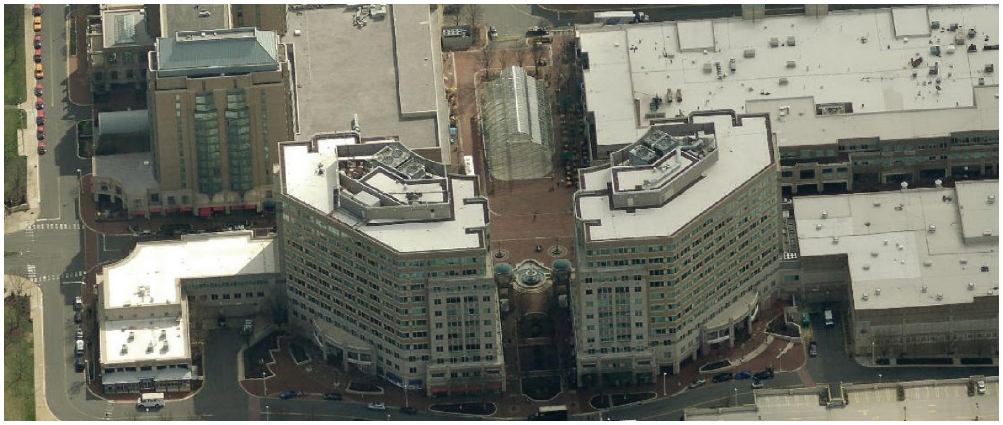


Figure 2: Oblique image of Reston Town Center.

GIS will obtain the necessary software tools to enable integration of oblique imagery into county web applications as well as implement enhanced web-viewing tools to replace older desktop viewing tools.

Planimetric data is another foundational data set for almost all county applications from Police and Fire and Rescue vehicles, to desktop applications, and Fairfax Mobile application. GIS has partnered with the Department of Public Works and Environmental Services to fund the update to this data some of which is now 16 years old. By July 2013 all of the planimetric data will be updated based on 2009 imagery. Over 13 million new planimetric features will be added to the GIS planimetric data – an increase of over 400%. GIS will work with DPWES to identify approaches that support updating of this data more frequently. Figure 3 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, 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 of the imagery for the county. That imagery is used on the web and as a foundation for all GIS data layers since they can be easily overlaid on the imagery as well as be derived from the imagery. Calendar year 2013 was an acquisition year, and the imagery was successfully captured despite a difficult spring which provided very few windows of good flying conditions. Figure 4 is 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. The joint project with the county's Department of Public Safety and Communication (responsible for the CAD/911 system) to check the MAR addresses against Post Office data and also to cross check against telephone companies' Master Street Address Guide (MSAG) is underway and will wrap up in 2013.

Behind the scenes GIS is implementing more web-based technology. There has been a paradigm shift over the past several years where software companies and the public at large is more web focused. The county is pushing hard in the direction of web-based software that provides GIS as a service. The software now functions well on virtual servers which have enabled implementation of several virtual GIS servers. Many of the county's applications (e.g., iCare, WebEOC) as well as the county's mobile applications now

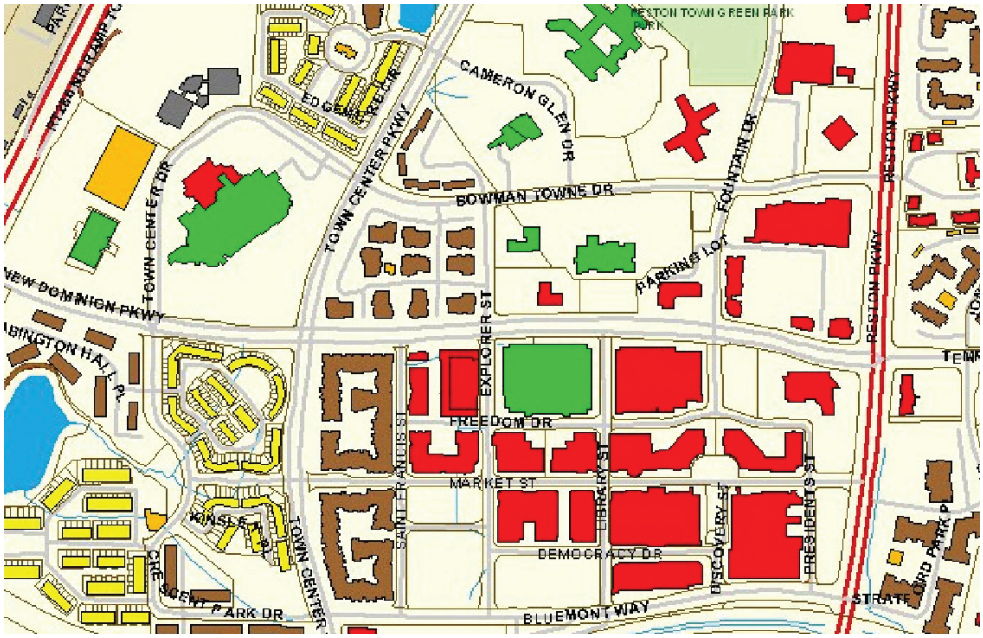


Figure 3: Planimetric Data for Reston Town Center. Buildings colored by zoning.

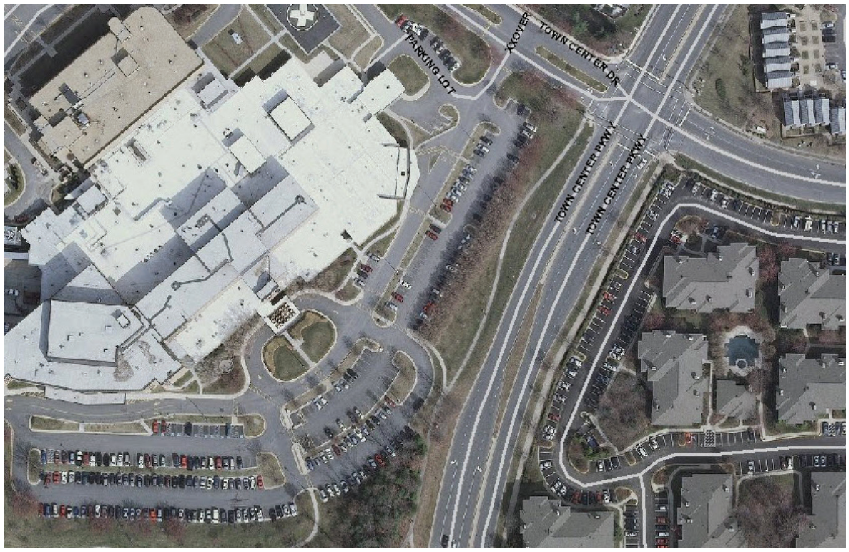


Figure 4: Ortho image of Reston Hospital area.

consume GIS web-services. There are over 70 web services published by GIS with many more expected, which may require additional software and hardware.

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. The project went live in spring 2012. 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. This proved to be 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.

Interoperability is crucial in Northern Virginia since emergency response regularly crosses jurisdictional boundaries, particularly with Fire and Rescue it is important to have valid street centerline information for regional neighbors. As the GIS office maintains the street centerline data used in the CAD/911 system, it is working with neighboring jurisdictions to obtain the data. 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 drew to a close at the end of June 2012 and testing and review will continue. This project was funded by a grant from the State's Wireless 911 Board and will enable Fairfax and its neighboring jurisdictions to share up-to-date centerline data for their CAD systems. It will also enable member jurisdictions (Loudoun, Prince William and Arlington counties and the cities of Alexandria and Fairfax) to have 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. 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 our 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. GIS finished major revisions to the road centerline in order to be compatible with the new version of the CAD/911 software which was installed in 2012.

The county's GEM application is now scheduled for a major refresh in 2013 once the necessary software functionality is released by the vendor. The code base will be revised and moved to the latest version of the underlying software (Onoint) also, The Digital Map Viewer

(http://www.fairfaxcounty.gov/gisapps/pdfViewer/default.htm), a heavily used application, has been completely rewritten and was released in 2012.

Over the past year there have been many 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.

Prior to the start of the operation, GIS staff assisted the 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 (see Figure 5). 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.

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 GIS staff."

While reapportionment of the county's supervisor districts occurred in FY12, it was only the beginning of the process to prepare a complete set of maps for the US Senate and House and State Senate and Delegate districts as well as voting precincts. This has required ongoing and extensive work with the county Electoral Board and General Registrar to refine voting precincts boundaries. Figure 6 is an example of one of the small versions of the VA Delegate Districts (detailed wall maps of these are available on the web at: http://www.fairfaxcounty.gov/maps/gallery_WallMaps.htm).

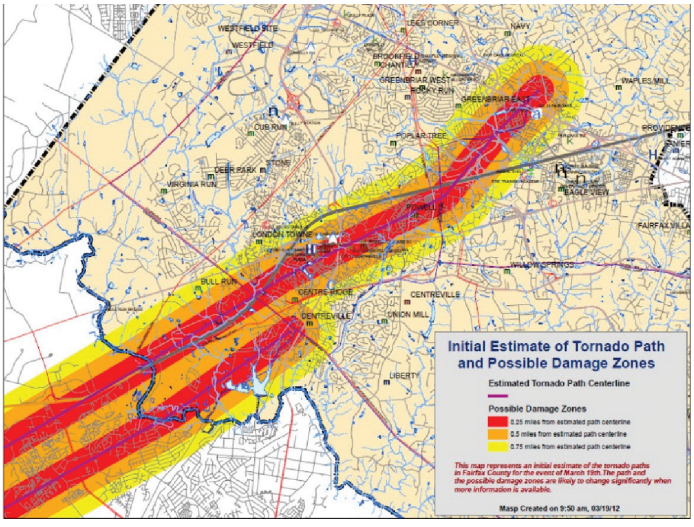


Figure 5: Tornado Path and Damage Analysis

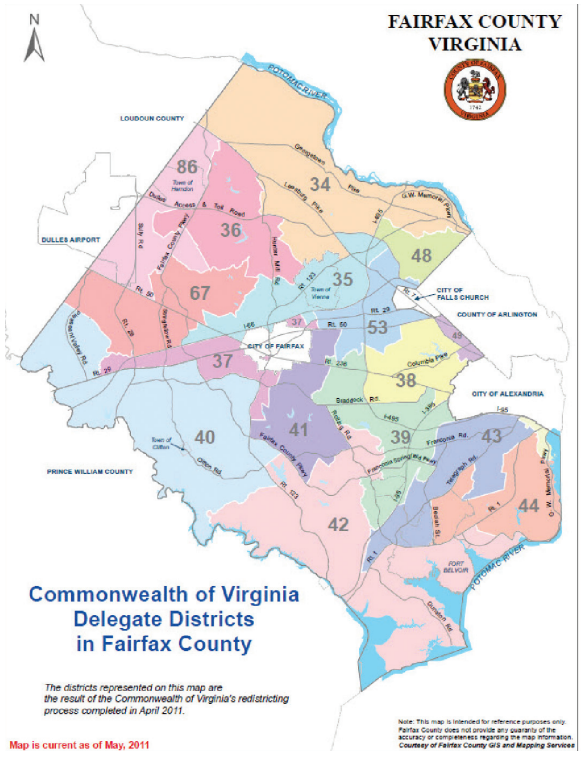


Figure 6: Commonwealth of Virginia Delegate Districts in Fairfax County

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 103 GB (including business data tables), and the raster data is now over 4 TB on line with an additional 3.9 TB currently archived that will be moved to production. 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 40,800 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.

Data Layers	FY 2005	FY 2007	FY 2009	FY 2011	FY 2012	FY 2013
Parcel	341,000	356,000	358,300	358,140	358,630	358,765
Addresses	360,000	368,000	365,100	365,669	366,295	366,488
Building outlines	248,000	257,000	257,300	264,361	267,729	274,078
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)
Number of streetlights		57,939	59,937	60,448	60,557	60,825
Linear miles of sanitary sewer lines		3,350	3,390	3,410	3,424	3,440

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

The availability of key county data digitally through 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 soils 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 the Northern Virginia common centerline elements and made available to county agencies and 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.
- **DPWES Storm Water 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. 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. 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 overwhelmingly manual 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 is working with the Department on the design of the next version of My Neighborhood's Police Incident viewer. 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 the extensive planning for the inauguration of President Obama – since close coordination with federal and neighboring agencies was necessary. GIS also supported '*snowmaggedon*' in FY 2009, superstorm Sandy and the Derecho responses in 2012, and regularly supports the Office of Emergency Management in table top exercises.
- **The 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.

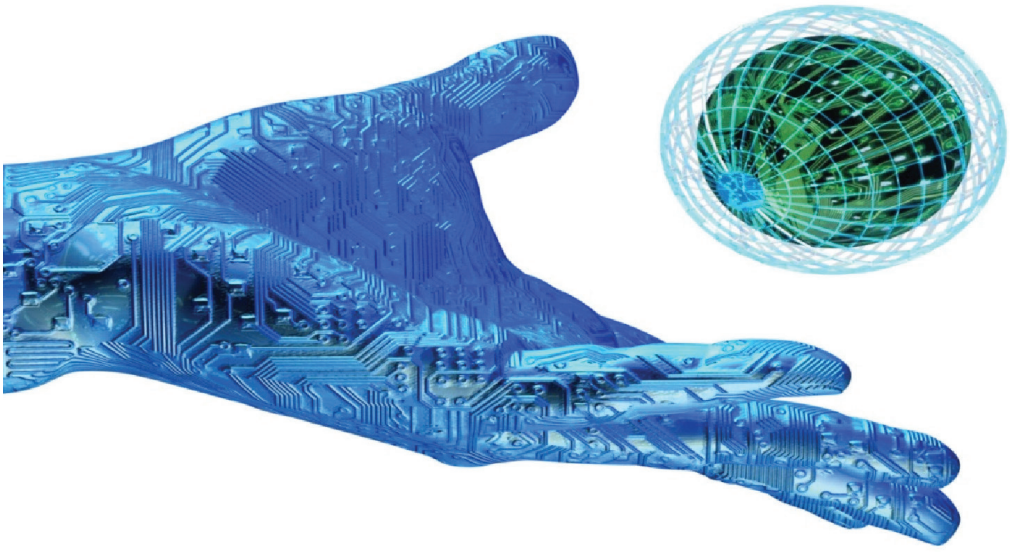
The breadth of GIS utilization across the county, and the extent of its integration into the overall IT architecture are reflected in the award winning plans and efforts of the preceding years. The awards recognize GIS's achievement in fostering and expanding the use of GIS applications to improve county operations:

- In FY 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 Environmental Systems Research Institute (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.



2.4 Customer Relationship Management (CRM)

Expectations for easy access to government services continue to expand dramatically. Citizens look for ways to interact with their government through channels that best suit their needs. Fairfax County continues to respond to this growing need through the implementation of 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. The county currently uses Internet Quorum (IQ), and Siebel technologies to enhance tracking and response to citizen inquiries and requests. These solutions were successfully implemented 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.

Enterprise 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, mobile devices, as well as a live Call Center Agent. 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 knowledgebase to support consistent distribution of information. The Office of Public Affairs processed over 33,550 requests for county information and resources since deployment of the CRM application.

Office of Public and Private Partnership (OP^3) is the clearinghouse for partnership information in Fairfax County. CRM efforts in OP3 have consolidated disperse contact list, 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. In January 2010, 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.

On-going goals include enabling screen pop interaction with case record information, contact interaction records, transparent case escalation, and consolidation of 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. The strategy also includes 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. The CRM strategy integrated with WEB, mobility, wireless apps solutions are the foundation for the county's customer service and public engagement initiatives.

2.5 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 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 be able to handle to legal mandates for records retention and retrieval associated with case management, FOIA and e-Discovery (for example), as well as enhancing 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

In FY 2010 the Department of Family Services implemented IDM solution for Self Sufficiency program and begun the requirements for Children, Youth and Family program. In FY 2014 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 the Clerk to the Board. 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.

While most county agencies have adopted the enterprise-wide solution, smaller scale applications are in use in Laser-fiche from prior legacy applications. In 2011, the Juvenile Domestic Relations and the General District Courts collaborated with the Supreme Court of Virginia in participating as a part of work-flow for case documents and integration with state-wide court case management system. Future strategy continues with interfacing the Circuit Court.

Fairfax County continues to expand Enterprise Content Management System (ECMS) in fiscal year 2014. Department of Planning and Zoning determined that an Enterprise Content Management System (ECMS) and Scanning would afford the best solution for automating the Departments 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 and shelving for storage of paper contents. DPZ has completed gathering requirements phase. In next several months DPZ would develop the ECM system and would go in fiscal year 2014. DPZ Staff would start leveraging Enterprise Content Management system for daily business needs.

The on-going strategy includes integration with the County Archivist goals for over-all records management both in-house flow from agencies and also using cloud based solutions.

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.

2.6 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, which has been recognized by The Information Technology Policy Advisory Committee (ITPAC (see Section 1) and industry providers as a well-developed capability with a resulting competitive TCO.

Virtualization and Consolidation

Virtualization and Cloud Computing technologies serve as the fundamental foundation for this strategic direction. In FY 2007-FY 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 virtualizations 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 data center thereby contributing to countywide "Going Green Initiative". These resource efficiencies also allowed Fairfax County to optimize management of resources, maximize application throughput, increase control over delivery of IT services, simplify administration, and ultimately build a foundation for the virtualization and standardization of other infrastructure components.

In FY 2008-FY 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 next phase of 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, with the ultimate goals of reducing the total cost of ownership and providing highly available infrastructure without compromising the quality of services. The following strategic plan will direct enterprise platform and infrastructure in next fiscal year.

Self-Service Virtual Resources: with an automated workflow, platforms and associated resources (OS, Storage, Network, etc.) will be pre-allocated for users to choose from service catalogues. The county and agencies will gain great efficiency, visibility and flexibility.

Highly Available/DR Ready Virtual Infrastructure: Started in FY 2013, critical services and systems were identified for high availability and be 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.

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.). In addition, Fairfax County introduced complimentary technologies such as enterprise data backup/recovery, mirroring,

clustering, data de-duplication, replication, centralized infrastructure management tools, etc in order to 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 2014 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.). Also with the introduction of SAP as the county's ERP solution, DIT will be upgrading the telework/remote access portal to allow personnel the ability to access the ERP system functions (given their security profile) from anywhere over any device securely. The data will render itself to the appropriate form factor. With these enhancements, the county will be able to meet its strategic goal for an agile infrastructure architecture that meets 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.

The county also integrated selected Public Cloud services as part of the effort to increase the quality of service and reduce the cost of ownership. For example, Symantec VIP is a cloud based service and it will replace hardware token and will serve as another factor of authentication. The county will continue evaluate services provided in public cloud.

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 tool 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 having a mature 'private' enterprise cloud, this technology has been adopted and being implemented 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. In 2011, Symantec's SMM was added to the county's Symantec secure tools already in use, and for complex needs, found to be the most cost effective and deployable given the county's balance for overall security, flexibility, device support and cost containment needs.

Enterprise Telecommunications

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 is to implement Session Initiation Protocol (SIP) trunking services and benefit from the advantages in functionality and features this leading-edge technology provides. DIT is currently developing implementation plans for creating pure IP connections to the carrier cloud. This will yield a communications architecture that is secure, robust and scalable at a lower cost than traditional Public Switched Telephone Network (PSTN) connections.

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, has been implemented as a pilot in selected county facilities, with wide-scale implementation imminent. The integration of the Avaya platform with Microsoft Office Communicator creates a seamless work environment where information and communications share common attributes and interwoven capabilities. This also includes opportunity to integrate with commercial wireless platforms to be deployed as part of smart-phone and 'I' pad 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.

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.

A plethora of data from several obsolete mainframe VSAM systems, Oracle databases, and office automation documents that included building permits, site development plans, code enforcement investigations, and inspections, were centralized in the data warehouse to provide agencies with a single point of reference to streamline government services, and meet Board of Supervisor Land Information Accessibility directives.

Citizen/industry accessibility options to the GIS based warehouse and transaction-specific systems include, iPhone app store resident applications (with Android compatibility) that allow citizens to apply for permits, schedule inspections, report alleged land use code violations to county agencies, and assess prospective property procurements for compliance with county codes.

Department of Code Compliance and other agency staff can access the warehouse from the field (via VPN & wireless technologies) to enhance "mobile office" capabilities with a streamlined business architecture that includes real time customer property inspection, and construction assessment updates that contribute to sustaining safe and healthy neighborhoods.

FY 2013-2014 data warehouse expansion initiatives include digital dash boards for agencies' senior management to assess agency operational efficiency, Homeowner Association email notification of new

development plans affecting their neighborhoods, and augmenting the warehouse with land use infrastructure metrics.

The initiatives will also involve a pilot program to allow selected industry participants to electronically submit commercial development rezoning plans to the county via the web. Staff will evaluate the relative benefits and costs of the pilot before deciding next steps (i.e. expansion to other plan types and/or the entire industry).

The county will continue evaluation and forward planning for the next generation, web-based integrated government permitting, inspections technology for a strategic project that would include capabilities to further enhance cross-agencies' processes and expanded business needs, as well as more contemporary technical architecture and viable SaaS offerings.

SECTION 3

INFORMATION TECHNOLOGY PROGRAMS

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SECTION 3

3.1 Information Technology Programs

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 strategy has two key elements. First element is to provide an adequate technology infrastructure of basic technology for agencies in making quality operational improvements and efficiencies. The second is to redesign business processes and apply technology to achieve large-scale improvements in service quality and achieve administrative efficiencies, which includes open-government initiatives. The county's long-term commitment to provide quality customer service through the effective use of technology is manifested in service enhancements, expedited response to citizen inquiries, improved operational efficiencies, better information for management decisions, and increased performance capabilities.

FY 2014 Initiatives

In FY 2014 funding of $6.11 million, which includes a General Fund transfer of $2.91 million, a transfer of $2.90 million from Cable Communications Fund (400-C40030 formerly Fund 105), and interest income of $0.30 million, is provided for initiatives that meet one or multiple priorities established by the Senior Information Technology Steering Committee. These initiatives include a mix of projects that provide benefits for both citizens and employees and that adequately 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 below, 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, the Chief Technology Officer and other senior county managers, adopted five IT priorities which guide the direction of the IT investment portfolio (Fund 10040). 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 and to implement a project phase 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 with the FY 2014 Budget Guidelines funding requests for Fund 10040, IT projects were limited to IT projects requiring a funding increment to meet project milestones, contractual obligations, and security and infrastructure requirements for enterprise-wide IT systems. The projects recommended for funding meet one or more of the IT priorities established by the Senior IT Steering Committee and align with the county's strategic and business requirements. The established priorities for IT projects for FY 2014 are summarized as follows:

PRIORITY	FY 2014 Adopted Funding
Completion of Prior Investments	$0.59 million
Enhanced County Security	$1.25 million
Improved Service and Efficiency	$1.20 million
Maintaining a Current and Supportable Technology Infrastructure	$ 3.07 million
TOTAL	**$6.11 million**

Completion of Prior Investments – $0.59 million

The county's IT program focuses on using technology as an essential tool to enable cost-effective delivery of services, and continues to stress the need to build reliable, supportable projects for these services in a timely manner. Many projects funded can be completed within that fiscal year, while others are multi-phase projects that require more than one year of funding.

FY 2014 funding of $238,280 is included for continued support for the county's planned on-going maintenance of essential Geographic Information System (GIS) data. Through a series of complex geospatial transformations the raw imagery, taken from aerial imagery flown by the state, is converted to GIS data available to many county agencies including: Police, Fire and Rescue, Office of Emergency Management, Department of Public Safety Communications, the Departments of Transportation, Housing and Community Development, Public Works and Environmental Services, Planning and Zoning, Health, and Tax Administration, and others.

FY 2014 funding of $175,000 is included to complete the final phase of the E-summons project, a partnership between Fairfax County General District Court and the Fairfax County Police Department (FCPD). This funding supports implementation of the e-summons solution for the remaining FCPD patrol cars. The project goal is for officers to capture and transmit traffic summons information to the Court electronically via hand held or in-vehicle electronic devices. The project will substantially reduce manual data entry, ensure data integrity, provide accurate code section violations to offices in the field, facilitate faster and safer ticketing process for officers, and enhance public access to traffic ticket and case information.

FY 2014 funding of $175,000 is provided for continued support and enhancement of an enterprise wide Volunteer Management System designed to improve volunteer recruitment, placement, scheduling and improved tracking and measurement of the impact of volunteer contributions to county government. Common data elements provide shared points of entry for citizens interested in volunteering for Fairfax County. The project objective is to streamline the process of matching volunteer abilities, interests and availability with county agencies' needs.

Enhanced County Security – $1.25 million

Providing funding for critical security requirements enterprise-wide IT systems is a long standing cornerstone of the County's IT policy.

FY 2014 funding of $500,000 is included for the Data Loss Prevention project which will implement an IT security technology solution designed to discover, monitor, protect and prevent leakage of confidential data wherever it is stored or used on networks, storage, and endpoint systems. In data leakage incidents, sensitive data is disclosed to unauthorized personnel either by malicious intent or inadvertent mistake. Examples of sensitive data include social security numbers, HIPPA protected patient information, credit card data, and other sensitive county information. Since the project plans are to deploy the software at the client-level, the solution will be capable of discovering sensitive information locally on a system prior to any potential use of encryption for transmission.

FY 2014 funding of $750,000 is included for the Governance, Risk and Compliance (GRC) Auditing

Project which provides for implementation of the audit tool for security user access monitoring and policy compliance. GRC will automate security monitoring; provide real time visibility of system access controls for the county's new ERP system via a dashboard. The tool supports monitoring and review activities of the Office of Internal Audit, Department of Finance, and IT Security Office, as well as is necessary for the county's annual financial audit in order to identify and address audit findings regarding management controls for security and legal compliance.

Improved Service and Efficiency – $1.20 Million

Projects funded in FY 2014 provide for improved service and efficiency in provision of services to the residents and the business community in Fairfax County. Included projects supporting the county's e-government programs, emergency management solution, and initiatives that improve county processes resulting in enhanced efficiencies and service delivery.

FY 2014 funding of $200,000 is included to support of the county's continuing commitment to e-Government for initiatives that improve public accessibility to county information and services. The project supports of the county's web and e-government services, mobile applications, county's intranet, web content, social media integration, transparency, Web 3.0, and compliance with e-health records. The e-government programs also enhance citizen participation with county government through online public input processes.

FY 2014 funding of $800,000 is included to support the Tax Systems Modernization Project. Project goals are to eliminate the technology risks and functionality gaps of existing legacy mainframe systems for the Personal Property and Business Professional and Occupational Licensing (BPOL). The current systems designed and developed during the 1980s and 1990s use dated technology and programming languages, which have reached the end of their viability. The outdated technology platform limits integration with other county and state systems, as well as limits citizen interaction and self-service opportunities via web based technologies. Integration with Virginia State Department of Motor Vehicles and Department of Tax Administration applications are critical for assessment, taxation, and enforcement purposes, cannot be automated due to limitations within Personal Property and Business Professional and Occupational Licensing. All of these issues have a direct impact on the county's revenue.

FY 2014 funding of $200,000 is included for the Emergency Management Portal which provides support for the development of a system to capture damage assessment data in real time during an emergency event. The system will allow first responders in the field to update facility conditions, road closures, and other pertinent information to personnel at the Emergency Operations Center (EOC) via smart devices. The data collected will be structured in a way to allow GIS to graphically represent developing emergency conditions on a map. This system supports the needs of multiple agencies during emergency events.

Maintain a Current and Supportable Technology Infrastructure – $3.07 million

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 2014 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.

FY 2014 funding of $2,500,000 is included 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.

FY 2014 funding of $400,000 is included for continued conversion and migration of the county's remaining legacy financial, public works, public safety, personal property, and human services mainframe based systems. Significant historical data needs to migrate off the mainframe onto more contemporary IT platforms.

Upon completion, the county's legacy mainframe platform will be substantially retired.

FY 2014 funding of $100,000 is included to support growing 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 2014 funding of $75,000 is included to provide 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 TILE	FY 2010 ADOPTED	FY 2011 ADOPTED	FY 2012 ADOPTED	FY 2013 ADOPTED	FY 2014 ADOPTED*
FUND 40091						
2G70-056-000 (IT0001)	Public Safety Communications Network/ Systems	4,304,000	4,629,000	4,629,000	4,629,000	4,629,000
	TOTAL FUND 40091	**4,304,000**	**4,629,000**	**4,629,000**	**4,629,000**	**4,629,000**
FUND 10040						
2G70-003-000 (IT004.03)	Oblique Imagery – GIS			128,212	150,744	146,280
2G70-004-000 (IT004.04)	Planimetric Data Acquisition Program – GIS			150,000	187,000	92,000
2G70-006-000 (IT0010)	Information Technology Training	50,000	75,000	75,000	193,668	75,000
2G70-018-000 (IT0022.15)	Enterprise IT Architecture and Support			2,163,200	3,500,000	2,500,000
2G70-020-000 (IT0024.03)	Internet/Intranet Initiatives – E-Government			400,000	400,000	200,000
2G70-025-000 (IT0048)	FRD Incident Reporting &Records Management System	1,835,791				
2G70-026-000 (IT0050)	Public Service Radio Project	781,901	862,882	550,167	550,167	
2G70-027-000 (IT0054)	CSB SYNAPS and HIPAA Database Consolidation		175,000			
2G70-034-000 (IT0056)	Pilot Courtroom Technologies	182,000	75,000			
2G70-036-000 (IT0058)	Remote Access			200,000	200,000	100,000
2G70-038-000 (IT0060)	Telecommunications Modernization	2,100,000	1,742,000			
2G70-039-000 (IT0062)	Police Records Management System – I/LEADs	1,224,691				
2G70-040-000 (IT0065)	Facility Maintenance Management		665,550			
2G70-045-000 (IT0083)	Public Safety Architecture Modernization	3,156,293	843,705	1,215,000		
2G70-051-000	Data Reporting Project – DFS		100,000		300,000	
2G70-053-000 (IT0088)	Retirement of Legacy Systems			500,000	500,000	400,000
2G70-054-000 (IT0090)	Police In Vehicle Video System			3,670,000	1,860,000	
2G70-055-000 (IT0091)	Volunteer Management System			200,000		175,000
2G70-067-000	E-Summons		350,000			175,000
2G70-069-000 (IT0092)	Tax System Modernization – Tax/Revenue Administration				1,000,000	800,000
IT-000003	Data Loss Prevention Project					500,000
IT-000004	Emergency Management Portal					200,000
IT-000005	GRC Auditing					750,000
	TOTAL FUND 10040	**9,480,676**	**5,467,349**	**9,251,579**	**8,841,579**	**6,113,280**
	GRAND TOTAL: IT PROJECTS	**13,784,676**	**10,096,349**	**13,880,579**	**13,470,579**	**10,742,280**

*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.

3.2 Public Safety

2G70-056-000 Public Safety Communications Network/Systems (IT0001)

Project Description

This project provides for continued support and maintenance of the Department of Public Safety Communications (DPSC/9-1-1 Center) network, radio and mobile communication components. The network's component systems are vital for ensuring immediate and systematic response to emergencies, and replacement and enhancement is necessary to maintain performance, availability, reliability, and capacity to meet growing county population and demand for public safety services. Fairfax County DPSC 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, rescue and sheriffs) to receive dispatch messages, event notifications, to self-initiate events, make traffic stops, check on licenses, registrations, wanted persons, to maintain their status for response, and to communicate with one another and the DPSC communications center, without the use of voice radio or intervention of a dispatcher. An excess of 150,000,000 transactions are currently processed each year via mobile computer terminals (CTs) through the mobile data communications infrastructure. It is critical to keep this equipment current and always available to field personnel.

The Public Safety Communication Network (PSCN) supports emergency communications of the Police, Fire and Rescue, and Sheriff's departments. This includes public safety call taking (E-911, Cellular E-911, non-emergency), dispatching, and all affiliated communications support. Two of the major technologies utilized are a Computer Aided Dispatch (CAD) system with an integrated mobile data communications component and a wireless digital radio network for voice communications. The mobile data communications capability facilitates the dispatch of resources with minimal voice communications, provides field units direct access to local, state and national databases, and allows continuous contact with DPSC. The Public Safety Architecture Modernization Project (IT0083 /2G70-045-000) provided the underlying infrastructure components and shared capabilities required for the implementation of a new integrated, interoperable Computer Aided Dispatch.

This project also supports the upgrade of Fairfax County's Public Safety Radio System from an 11 site, SmartZone 3.0 Trunked Radio System to a 7.9 ASTRO25 Digital Trunked Radio System, including the addition of a 12th site to improve radio coverage. The upgrade transitions the radio system to an IP based network, further enhances existing outdoor and in-building radio coverage, as well as relocating the radio system central controllers from their previous vulnerable locations to the heavily secured Public Safety and Transportation Operation Center. Following completion of the enhanced infrastructure, this project will support the 5 year replacement of Public Safety Subscriber radios, which will be nearing end-of-life.

Project Goals

The goal of this project is to provide public safety computer, radio, and wireless systems, equipment and services required to ensure immediate and systematic response to emergencies, and to maintain performance, availability, reliability, and 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 were completed and a contract was awarded in January, 2010. Equipment was received and implementation began in July 2010. The 12th radio antenna site has been constructed and is in operation at Bailey's Crossroads. This additional tower infrastructure significantly improves radio coverage throughout this vital area. Both the Primary Antenna Control Site and the System's Master Site have been moved from their previous unprotected sites to the Public Safety and Transportation Operations Center. Final system acceptance occurred on December 28, 2012.

It should be noted, that during this same period of time, Fairfax County as well as the rest of the National Capitol Region has been involved in the Federal Communications Commission's (FCC) directive for rebanding the 800 MHz Radio System for Sprint/Nextel's nationwide frequency conversion. This involved twice touching and converting nearly 47,000 subscriber radios as well as the retuning of frequencies for every tower in the NCR. With the completion of the Radio Upgrade

Project, Fairfax County will now embark on a five-year replacement of its Public Safety Subscriber Radios. Continued significant funding will be required for this replacement, as well as replacement of the County's Mobile Data Communications equipment, see below.

The Mobile Data Communications System is an ongoing five year lifecycle replacement program for equipment used to support the mobile fleet. Funding is required each year in support of the program and to provide for contemporary updated communication equipment used by the public safety fleet.

Project Budget

FY 2014 funding of $1,200,000 is included for the first year life cycle replacement of a five-year replacement cycle for Mobile Computer Terminals (MCTs), the equipment for the Public Safety Radio System upgrade was funded via an equipment lease. Through project efficiencies, funding was available and used to pay off the remaining two annual payments for the Public Safety Radio System Lease in June 2013, saving future interest charges. Funding is provided by Fund C40091.

Return on Investment

The return on investment for this project is realized by the performance, productivity, and effectiveness of public safety services in Fairfax County. Replaced and upgraded technology for these systems is critical to the safety of the public and the public safety personnel they support.

2G70-007-000 Electronic Records Management System - JDRC (IT0011.5)

Project Description

Fairfax County's Juvenile & Domestic Relations District Court (JDRDC) and the 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, and electronic viewing 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

With the completion of JDIS Phase I and Phase II, the ability to capture, display and distribute images electronically for all JDRDC juvenile traffic case documents and adult criminal case documents has been achieved. Additionally, JDIS enables full case searching capabilities, assists court staff with the ability to view and interact with a real time daily court case docket and expedites the electronic delivery and exchange of documents between the courtroom and the post court counter, financial clerk and court services units (CSU).

The initiation of a juvenile intake pilot for truancy and runaway cases will take place in Phase III A where scanned intake documentation will be submitted to the clerk's office for acceptance into the juvenile's electronic case file. Additionally in Phase III A, JDIS will enable secure viewing of case files for CSU units outside the courthouse. Phase III B will follow to include the remaining juvenile delinquency case types, the use of barcoding and electronic signatures, and will also lead the way into limited public viewing.

Milestones

- Phase I completed for traffic related cases in all JDRDC courtrooms.
- Phase II recently completed to improve scanning and search features, add interactive docket features, include processes for adult criminal case capture, deliver/exchange data between the clerk's office and the CSU units and enable the adult CSU to submit reports to the clerk's office for inclusion in the electronic case file.
- Phase III (A) is in development and will include processing of juvenile intake case documentation,

exchange electronic documents between the clerk's office and the court services units for juvenile truancy and runaway case types, and enable case viewing outside the courthouse.

- Phase III (B) *will* include the processing of additional juvenile case types, barcoding, e-signatures and limited public viewing.

Project Budget

Existing funding is adequate. No new funding requested in FY 2014.

Return on Investment

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

2G70-021-000 Circuit Court Technology (IT0039)

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. The Circuit Court anticipates going live with the new software in the Fall of 2013.

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 courts 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, 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 backfile images have been processed and the redaction has been 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 caseload; 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. 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 cashiering 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 cashiering 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

CMS

- Provided web-based availability of court information on CPAN, 2005
- Implemented electronic docketing display, 2006

RFID

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

Redaction

- Integration of redacted data of backfile via secure remote access mandated by the legislature, FY 2011
- Integration of redaction in day-forward recording processes mandated by the legislature, FY 2012

Project Budget

Funding received from Virginia State Technology Trust Fund revenue, CPAN subscription revenue, Administration of Justice revenue, and agency funds-support Circuit Court's technology projects.

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 the Circuit Court saves considerable staff 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.

2G70-067-000 Electronic Summons (IT0071)

Project Description

This project is designed to develop automated solutions to streamline the traffic summons processes and implement of an Electronic Summons (E-Summons) application to automate the capture and transfer of traffic summons information from the Police Department to the Courts.

Project Goals

Project goals are to provide efficient and timely public access to electronic traffic case records in order to enable quick citizen access to traffic case records, enhance and improve case review, enable more efficient on line traffic fine payment, and improve court docket management. The e-summons project aims to reduce manual data entry and improve data quality as it relates to accuracy, integrity, reliability, and timeliness

Progress to Date

After extensive analysis and following implementation of a new police records management system, the Police Department is moving forward with an e-summons solution in Fairfax County.

Milestone

- Project direction and pilot solution identified for vehicles – FY 2010
- Vehicle pilot initiated – September 2010
- Vehicle pilot expanded – April 2011
- Pilot solution identified for motorcycles – April 2011
- Motorcycle pilot initiated – July 2012
- Motorcycle e-Summons implemented – September 2012 through July 2013
- Vehicle e-Summons implemented – FY 2014

Project Budget

Additional funding of 175,000.00 was provided to meet project milestones in FY 2014.

Return on Investment

Automated solutions will allow for the reallocation of existing staff to positions that provide direct assistance to the public, ensure greater data accuracy, eliminate data entry errors with potentially serious repercussions for the public, allow faster ticketing processes that get officers back on the road more quickly, reduce overtime for officers waiting in court, reduce the frustration and time citizens have to wait in court for a hearing, provide more efficient use of Commonwealth's Attorneys and Deputy Sheriffs, as well as provide the public near real time electronic access to case Information. Eliminating double data entry, reducing redundancies between agencies, and streamlining court scheduling and docketing processes, will create multiple opportunities to improve existing operations and provide better customer service to the citizens of Fairfax County.

2G70-045-000 Public Safety Architecture Modernization (IT0083)

Project Description

The Public Safety Architecture Modernization project supports implementation of common infrastructure supporting integrated CAD and Public Safety Records Management System (RMS), including public safety communications, as well as Police, Fire and Rescue, and Emergency Medical Services records management. This 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 GIS to meet public safety requirements.

Project Goals

The project implemented an integrated public safety information architecture enabling data sharing across functional areas of the CAD and RMS in order to support key public safety lines of businesses and provide flexibility to respond to both internal and external data sharing requirements. This multi-track and multi-phase project, replaced the legacy CAD and Mobile, Police RMS and Fire and Rescue RMS Systems.

Progress to Date

In November 2009 implementation of a new iCAD system for Fairfax County public safety agencies was successfully completed, and in January 2010 the new Police Records Management System – ILEADS also went into production. FY 2011 planned product enhancements and post implementation tasks were achieved. In FY 2012 completion and acceptance of the planned features of the CAD system were realized. The project was completed at whole system acceptance with implementation of the CAD Version 9.1.1 upgrade in August 2012. The Department of Public Safety Communications will be responsible for the maintenance of the core CAD components and interface connections.

Project Budget

No additional funding was requested in FY 2014; however, it should be noted that funding for FY 2015 and beyond, over the life of the system, will be required for upgrades and enhancements designed to keep the system viable into the future to reduce risk and be in compliance with contract obligations associated with the solution provider software upgrade cycles. Some of the costs associated with this project are being transitioned to operational cost centers.

Return on Investment

The Public Safety Architecture Modernization project represents a joint initiative undertaken by the public safety agencies in Fairfax County (Department of Public Safety Communications, Police Department, Fire and Rescue Department, Sheriff's Office, and the Office of Emergency Management) and provides an integrated public safety suite for CAD and RMS, with supporting network infrastructure to support robust GIS including automatic vehicle location (AVL), automatic vehicle routing recommendations (AVRR), broadband wireless data services and automated field reporting. Savings are achieved in implementing standards for all stakeholders, consolidating system infrastructure, and reducing system tool redundancies from prior independent systems. More importantly, this project greatly enhances Fairfax County's ability to respond quickly and effectively to emergencies that require coordination among the various responder organizations and share information required for collaboration, case management, reporting, remediation and mitigation.

2G70-050-000 Fire Station Alerting Technology Replacement (IT0086)

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 lifecycle 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 time of dispatch and prior to radio voice dispatch, provide safe lighting and alert process throughout station for personnel response to vehicles, recorded announcement, provide 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 has been completed in all Fairfax County Fire and Rescue stations. Phase II includes upgrading FSA in existing stations, the remaining infrastructure and component will be planned as funding becomes available.

Project Budget

New FY 2014 funding was not requested.

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 time of dispatch and prior to radio voice dispatch. The process reduces what the industry calls the "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.

2G70-054-000 Police In Vehicle Video System (IT0090)

Project Description

This project will install 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 will enhance 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

- Project kick off meeting and requirements analysis – FY 2011
- Project published through US Communities Contract – FY 2012
- Vendor selection and procurement – FY 2012- FY 2013
- Phased installation, testing, and training – FY 2013-FY 2014
- Project completion is planned for late – FY 2014

Project Budget

No additional funding was requested in FY 2014.

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.

IT-000004 Emergency Management Portal

Project Description

The Emergency Management Portal provides a system that collects real time damage assessment data during an emergency event or incident which necessitates EOC activation. The project goal is to have the system available 24 hours-per-day, 7-days-per-week during an emergency with the capability to capture and record details of field status updates and upload pictures and maps relevant to emerging situations.

Project Goals

The purpose of the Emergency Data Gathering Repository (EDGR) is to provide a system which is simple, easily accessible to county response personnel which supports a standardized data collection process and captures data in a way that allows users to easily aggregate, manipulate and report data to a broad audience. The system will be flexible enough to allow adjustments to data collection requirements as an incident unfolds and conditions change for improved overall situational awareness.

Desired Outcomes:

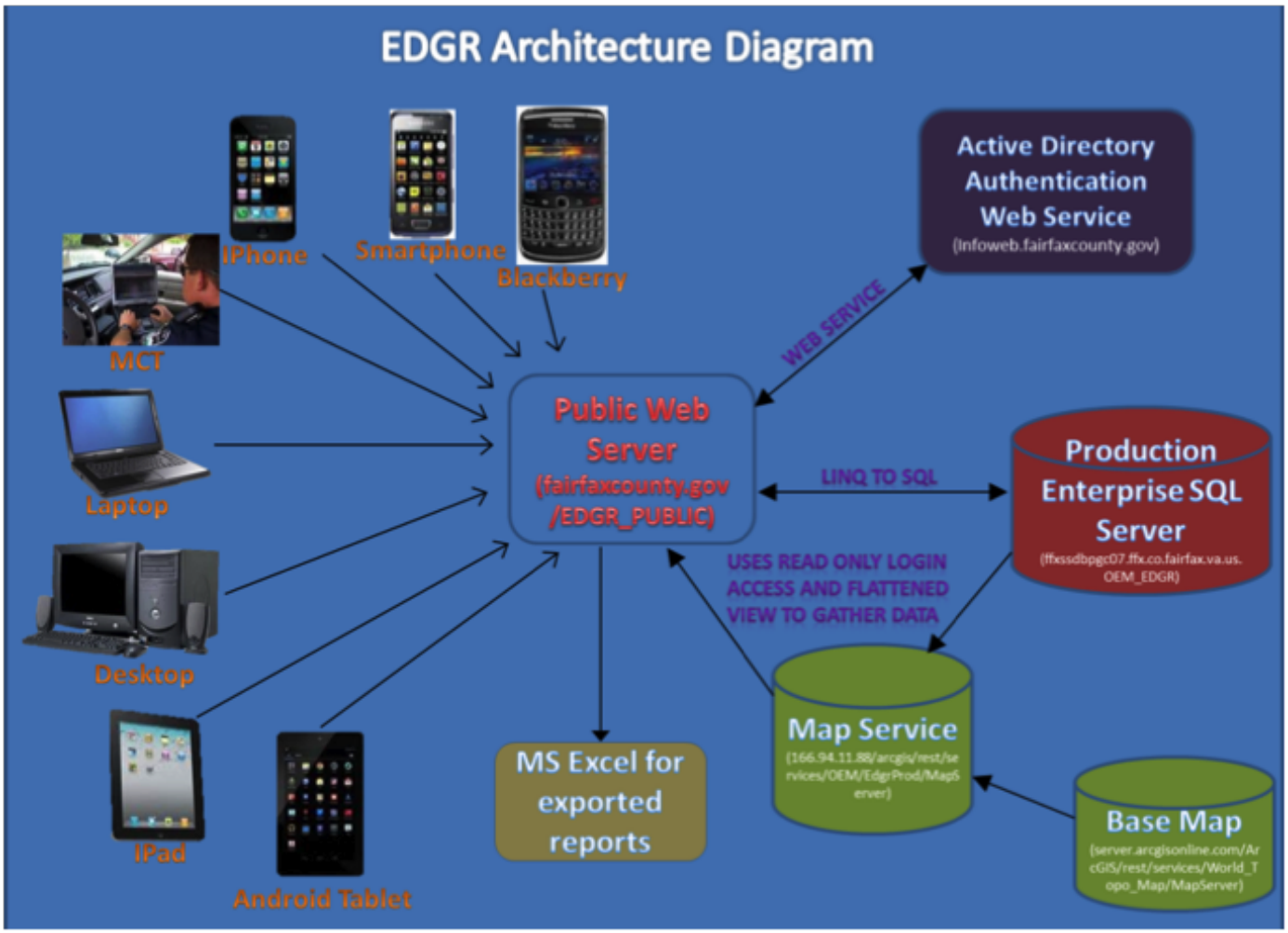
- Provide an IT solution that is easily accessible to all required county agencies.
- Provide a system that is available 24 X 7 X 365.
- Provide multiple data entry/data access methods (public internet, smart phones, other mobile devices, etc.) to county staff.
- Provide an IT architecture that is robust and flexible while consistent with County standards.
- Allow reporting agencies to view data collected during an emergency incident and receive periodic updates on status information.
- Provide a means for the integration of location status data with other critical county applications.
- Provide a database structure that allows data to be easily aggregated, manipulated and reported according to the needs of a broad audience of users.

Progress to Date

DIT's Public Safety Branch has provided the overall project management and technical team to design and build the web application accessible from multiple devices. The E-Gov team created the web service to authenticate users on the public site using Active Directory, reviewed the mobile screens and recommend improvement. GIS created a map layer of all locations and used web service to display the map. Other tasks completed at this time include:

- Mapping business processes of all participating agencies
- Developed and approve project charter
- Establish a list of responders/authorized users:
  - Office of Emergency Management (OEM) – EDGR sponsor
  - Department of Public Works and Environment Services (DPWES)
  - Transportation (FCDOT)
  - Community Services Board (CSB)
  - Neighborhood & Community Services (NCS)
  - Family Services (DFS)
  - Risk Management (Finance)
  - Facilities Management Department (FMD)
  - Fairfax County Park Authority (FCPA)
  - Housing and Community Development (DHCD)
  - Health Department
  - Police
  - Fire
  - Sheriff
  - Department of Public Safety Communications (DPSC)
  - Department of Information Technology (DIT)

- Identify agencies' power users to manage access within their agency
- Establish governance steering/process committee
- The DIT Public Safety team has met each agency to gather requirements, provide training in data entry and system administration, and to demo the EDGR prototype to agency staff.
- Project Timeline:
  - o DB Initialization Script, Demo Prep, OEM Business Process Deadline, and Complete Changes to Prototype – March 2013
  - o Testing, Code/Mobile Review, Load Test – March 2013
  - o Present Prototype to Agencies and Configure – March 2013
  - o Agency Review of Prototype* – April 2013
  - o Final Changes to Prototype – April 2013
  - o Agency Signoff Agencies – May 2013
  - o PAT Code Review, Complete Test Scenarios, and Move to Acceptance – May 2013
  - o Round 1 Acceptance Testing** – May 2013
  - o Round 1 Fixes – June 2013
  - o Round 2 Acceptance Testing – June 2013
  - o Move to Production – June 2013



Project Budget

FY 2014 funding of $200,000 is included to support this new project which will 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 MCT. The data will be collected in a highly configurable database allowing the flexibility to adjust the data collected based on changing conditions and requirements. Data will be structured in a way to allow GIS to consume the data and graphically represent conditions on a map.

Return on Investment

The Emergency Management Portal will provide a real time, continuous feed from field personnel providing conditional status on county structures, capturing facility damage, accessibility, power, network, telephone statuses. Data will be entered via mobile device and aggregated to provide a comprehensive picture of event damage. Conditions will be presented graphically using GIS technology for simultaneous communication to both emergency planners at the EOC and responders in the field. Rapid capture and assimilation of accurate information from the field will improve the county's effectiveness and timeliness in situational awareness, coordination, response and recovery efforts throughout an emergency event.

3.3 Corporate Enterprise

2G70-002-000 Orthoimagery Update - GIS (IT0004.2)

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 of the county web and desktop mapping applications that include maps.

Project Goal

The goal of the project is the continued implementation of a four-year cycle to update orthoimagery for all 407 square miles of Fairfax County with high resolution and accuracy for county applications and users.

Figure 7: Plane used to acquire ortho images

Progress to Date

With the acquisition of state imagery in FY 2009, and FY 2013 the four-year imagery update cycle will be up-to-date later in 2013 when the ortho imagery is delivered. 2013 proved a difficult flying year due to extended windy and cloudy conditions – both of which prevent acquiring imagery. Fortunately the State's contractor was able to complete the imagery before the trees leafed out (other areas of the state weren't so fortunate). 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 which will be in FY 2017.

Return on Investment

The orthoimagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Multiple county agencies have benefited from the use and availability of high resolution orthoimagery data and others are expected to utilize the data to enhance efficiency and program management. For example, orthoimagery is used successfully in property appeals cases and allows the county to effectively defend increased property assessments and help citizens with home assessment valuations. The imagery is also

utilized to resolve 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 also reduced the need for field visitations where county staff has a need to reconnoiter an area for various reasons.

The orthoimagery serves as a highly accurate quality controlled layer in the GIS to which 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. This is possible because 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 public web applications that include maps, enabling users to view aerial imagery of any area of the county. These applications serve about a million maps per year enabling public users the ability to view parcel outlines, hydrography, as well as major and minor roads. The accurate orthoimagery serves as a base for the 3-D imagery in Virtual Fairfax.

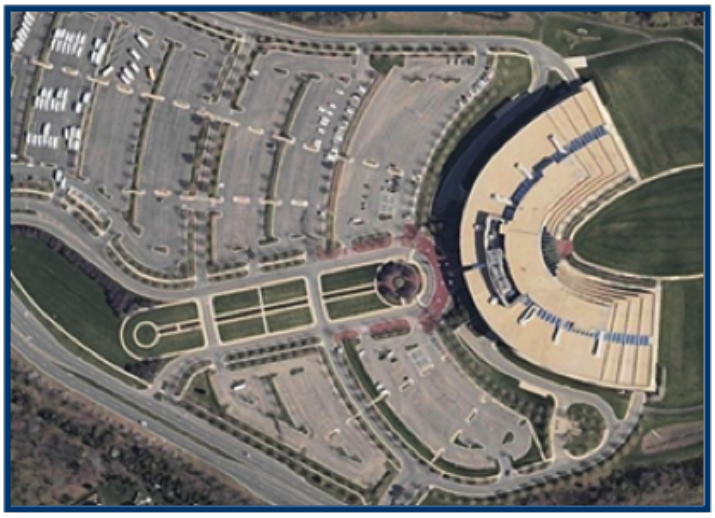


Figure 8: Sample ortho image

2G70-003-000 Oblique Imagery – GIS (IT0004.3)

Project Description

This project provides oblique imagery that 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). This image product enables 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 involved in their work by enabling virtual visitation, which enables staff to easily assess values and conduct analyses on buildings not previously possible. 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.

Figure 9: Plane used to acquire oblique images

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. Through a competitive procurement, a new contract with Pictometry was put in place last September and can be used for up to 6 years.

The imagery acquired this year has much higher resolution than before (3" resolution vs. 4") and should be even more useful for evaluating properties and creating 3-D building objects for Virtual Fairfax.

This year the county will also acquire a new software tool from Pictometry that will enable the imagery to be served via the web with functionality needed by tax assessors and others. This will make it possible to integrate oblique imagery with other applications and reduce usage of the more cumbersome software that has been used from the first image delivery.

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 increase over the past several years.

Project Budget

Funding of $146,280 is recommended in FY 2014 to maintain the county's spatial data for oblique imagery.

Return on Investment

The oblique imagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits to it users. In particular, The Department of Tax Administration (DTA) has found it very useful in supporting their operations because of the ability see all sides of a structure to determine material composition, floors, decks and other features. In FY 2010, DTA increased usage of oblique imagery and successfully reduced field inspection time and costs further.

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 in supporting response to an incident. For instance, it helps Fire and Rescue dispatchers to detect small vertical features such as fences which could block fire fighter and fire hose access and helps call takers more accurately determine the location of callers (e.g., at complex intersections).

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.

Figure 11: Sample Oblique image

2G70-004-000 Planimetric Data Acquisition Program - GIS (IT0004.4)

Project Description

Planimetric data is planar data (2D) derived from observable natural and manmade features visible on aerial imagery. Planimetric data layers make up many of the key GIS layers used in most of the maps made in the county. These key datasets 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. 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 update program will leverage the 2007 and 2009 aerial imagery acquired in partnership with the State. Acceptable newer imagery will be used as it becomes available.

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. The current effort is more comprehensive and can serve more county needs. 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

All of the planimetric data from 1997 has been updated. About seventy-five percent of the county was updated using 2009 imagery and the remainder with 2007 imagery. The 2007 data is being updated, funded solely by DPWES, to 2009 and will be complete in July 2013. At that point all of the planimetric data for the county will be based on 2009 imagery.

The imagery used for the planimetric update was captured by the state of Virginia. The base set of planimetric features that were updated includes all of the planimetric features originally compiled in 1997. New features, identified through stakeholder meetings, that have been added to assist in environmental and transportation needs include:

- Driveways
- Sidewalks
- Pools
- Patios
- Decks
- Sheds
- Tennis & basketball courts
- 2 foot contours (currently have 5-foot contours)
- Building heights and base elevations
- Multi-level parking upgrades.

Overall the planimetric feature count in the GIS database increased from 3,771,137 to 16,222,416, an over 4-fold increase. These additional types of features were identified through a series of stakeholder meeting with county agencies.

Now that all of the data has been updated it is interesting to look at some project statistics on features added or updated:

Feature	Added/Updated	Total in Database
Buildings	113,898	274,098
Paved Driveways (New)	239,029	239,029
Sidewalks – miles (all replaced)	3,826	3,826 6,270 previously
Building Additions (deck, patio, pool, other) (New)	239,953	239,953
Recreational Features (tennis basketball courts, other) (New)	5,380 1,215 tennis courts 834 basketball courts	5,380
Storage Tanks (New)	561	561
Spot Elevations (all replaced)	201,455	201,455
Contours (miles) (all replaced)	108,927	108,927 42,575 previously
Spot elevations (all replaced)	1,469,392	1,469,392

Overall, 12,451,279 additional features were added to the original 3,771,137 features, and a number of the original features were updated.

Project Budget

This project is jointly funded by DPWES and DIT. FY 2014 funding of $92,000 is provided in Fund 100-C10040 for continued support of the planimetric update project.

The intention is to update the planimetric data on a regular basis, doing approximately 25% of the county's area per year. This cycle fits the aerial imagery acquisition cycle of once every four years. The regular updates will reduce the cost of the updates since fewer features will need to be updated and possibly only selected portions of the digital terrain model will need updating.

Return on Investment

The planimetric, DTM, and topographic contouring at 2' contour interval data update project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Planimetric, DTM, and contour data has proved extremely valuable in a wide range of county operations. In particular, a much more accurate elevation model of the surface of the county significantly improves the accuracy of storm water analyses. Cost savings have been achieved over time as GIS staff have assisted key agencies develop high resolution data. These included, DPWES, The Park Authority, and also Fairfax County Water, where a 1' or 2' detailed and accurate DTM was needed. For instance a 1' contour data set was developed for flood plain mapping of New Alexandria and Belleview project. The planimetric, DTM and contour update project makes a tremendous impact as it enables agencies to readily access data needed to assist projects anywhere in the county, which saves time and money and enhances response, efficiency, and overall productivity.

Planimetric data is also an important component in the mapping applications in the county's new CAD system. The data is used in all public safety vehicles with CAD (about 1,400) as well as county dispatchers and call takers. The planimetric maps provide a clear and fast visual display on terminals to enable emergency response personnel to navigate and analyze the environment around an incident. Since planimetric maps are very small from a data perspective, they do not place heavy processing demands on the mobile display terminals, thus improving response time of the terminals.

A detailed survey was sent to users of the planimetric data in 2012. The findings were significant:

- Sixty percent of the 97 respondents said they could not even do their current work without planimetric data
- For those who could do their work without planimetric data, it would take them from 1-24 additional hours per week to do their work.
- Sixty-eight percent said that their GIS products that include planimetric data enable others to save time in their work.
- Over 50% of the respondents wanted planimetric data updated at least every two years to avoid impacting the quality of their work
- 82% of respondents agreed that not maintaining the planimetric data as frequently as they stated would reduce the effectiveness of their agency's work.

2G70-011-000 Automated Board Meeting Records (IT0011.13)

Project Description

This project will design and implement a document-imaging program in the Clerk to the Board's Office, which will enable the Clerk to the Board's Office to electronically capture Board of Supervisor meeting records and make them available on-line to the public and county staff.

Project Goals

To electronically capture Board of Supervisor meeting records and make them available on-line to the public and to county staff.

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 required for FY 2014.

Return on Investment

This initiative is expected to increase the efficiency of producing the board matters package including streamlining the process of getting the records on-line; provide a viable, accurate document system for older and one-of-a-kind documents; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

2G70-019-000 Public Access Technologies – Interactive Voice Response (IT0024.2)

Project Description

Interactive Voice Response (IVR) technology program develops custom interactive telephone applications that can access and update data in 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.

Progress to Date

The DIT IVR 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 has developed a Request for Proposal (RFP) for a new Interactive Voice Response system. The RFP has been assembled and is expected to out in FY 2014.

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
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 the system, expand application of the capabilities in additional business areas, and implement enhancements. No funding provided in FY 2014.

Return on Investment

Public access technologies such as the IVR expand citizen access to county information and services and minimize staff resources need to provide basic information, and allow staff deployment more complex and specialized tasks. The Public Access Technologies continue to provide 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.

2G70-020-000 Internet/Intranet Initiatives – e-Government (IT0024.3)

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 information, provide additional search capabilities on the public web site, and enable 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 11,257,040 visitors, which equates to about 54,412,502 page views and about 432,144,125 valid hits for FY 2012. 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 them the benefit of getting services and

information from anywhere at any time by delivering information in a more conveniently accessible platform

- Enhances 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.

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 like 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!, email 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 extended its presence by adding 22 official social media sites on Facebook while continuing its presence on Twitter and Youtube:

Facebook – http://www.facebook.com/fairfaxcounty
Twitter – http://twitter.com/fairfaxcounty
Youtube – http://www.youtube.com/user/fairfaxcountygov

1 – Public Web Site Search and Navigation

During the first phase of the project over 120 content contributors were involved in migrating information from the old site to the redesigned site with a six-month period. The Project team defined a basic Information Architecture for the site, which was then validated by 14 citizen and business focus groups. A "look and feel" template was developed for the redesigned site and migration of over 20,000 files to the new templates was coordinated by the project team. Most importantly, the establishment of working inter-agency groups for the development and dissemination of standards related to site design, application development and implementation proved critical in the project's success. As part of the redesign, a "Contact Us" database was implemented, which provides citizens with direct contact information to county staff from a single search interface. Additionally, site search functionality was enhanced.

In FY 2003, the main subject area pages (Living, Doing Business, Visiting and Government) were developed. Enhancements of the site included: News & Information section, Emergency Information, Local Weather and improved navigation. In FY 2004, a robust and secure environment that facilitates delivery of integrated and accurate information to citizens was built. In FY 2005, several new applications were added including Child Care training, My Neighborhood applications, kids and Teen portal, Seniors and Disability portal, Crime Mapping, and revamped DTA e-pay and Consumer Protection pages. In FY 2006, a new search on the public web site was implemented making site accessible via mobile devices.

In FY 2009, the public web site was redesigned to improve the architecture and functionality with a fresh look and cutting edge enhancements. To provide easy access to county wide services and information, consistent left-side navigation was introduced throughout the site. The implementation of the Google Search Application augmented the overall search functionality of the web site. Additionally a highlighted news section provides easy access to information categorized by topic, and brings into focus various county agencies, countywide initiatives, and featured county services. The public web site is part of the "Going Green Initiative" and provides a conduit for carrying out on-line business with the county around the clock. Additionally, in order to improve ergonomics and enhance accessibility a new color palette as well as text only, printer friendly, and text resizing features were introduced.

In FY 2010 - FY 2011, the county developed mobile version of the public website including mobile and iPhone applications. The county's public web site content is also available multiple languages.

In FY 2011 - 2012, 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. There has been about 4500 copies sold and over 10,000 free updates made in App Store for iPhone alone since June of 2011 with numbers increasing every day. Through Fairfax County standard and mobile version of the website provides our residents with a wealth of information, online services and connectivity with their government, mobile browsing is undeniably on the ascendancy – it is expected that by 2013, more people will be using mobile devices to access the web than traditional laptops and PCs.

In FY 2014, our goal will focus 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 homepage on the public website will be refreshed making it a more visual, intuitive, citizen-centric, and topic driven page. Using responsive design and adaptive approach, the same design and features will be translated to the mobile platform. We will continue to enhancing search functionality and develop more native mobile applications for public consumption.

2 – 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 collaboratively defined schema. This project allows Fairfax County to share park-related data with other local, state, and federal jurisdictions. Additional critical work on regional interoperability for homeland security linking Emergency Operations Centers and CAD functions began in FY 2005 with implementation of a pilot prototype in FY 2006.

On Feb 18, 2010 the ***Unit Status*** and ***Request for Resource*** Services of CAD2CAD Exchange between the operational CAD systems of Alexandria, Arlington, and Fairfax was successfully implemented. The project complies with emerging regional and national data sharing standards, thereby allowing for the inclusion of other regional partners as future grant funding permits. This achievement represents both a technology integration success and a long sought-after milestone in the operations of 911 dispatch.

4 – Intranet/Infoweb Redesign

In FY 2011, the county launched Phase I of **"FairfaxNET",** the county's new intranet, which is an employee focused enterprise SharePoint portal that provides an intelligent platform to seamlessly connect users, teams and knowledge so that Fairfax County Government can leverage relevant information across business processes to help them 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.

In FY 2012, about 20 county agencies have transitioned into FairfaxNET and are using the new intranet solution as a platform for sharing information and collaboration with other agencies both on a countywide level as well as internal collaboration. Ongoing efforts are underway to complete transition of all county agencies into FairfaxNET. FairfaxNET is now a gateway to the enterprise ERP solution (FOCUS).

FY 2014 goals include upgrade and migration of the county's intranet – FairfaxNET into SharePoint 2013, adding knowledge base to share information, develop 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.

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

FY 2014 funding of $200,000 is provided for on-going support of multiple e-government programs.

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.

IT-000001 Fairfax County Unified System – FOCUS (IT0079)

Project Description

Fairfax County government and school system 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 joint Steering Committee and project team comprised of county and school personnel was formed in 2008 to develop the project and provide project oversight. The Government Financial Officers Association (GFOA) provided assistance in the identification of current processes, creation of requirements, identification of best practices and opportunities of ERP, and preparation and review of the procurement phases.

Project Goal

Goals for the initiative are to support agencies in the delivery of government and school services and activities; take advantage of ERP best practices; provide the opportunity for multi-faceted data-driven decisions; significantly improve the efficiency and effectiveness of existing processes; enhance e-government initiatives; promote telework opportunities; and aid in the transformation, transparency and standardization of financial and human resource processes. This initiative is designed to foster an environment for change and leveraging modern system functionality.

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 completed in FY 2013, and phase 2 (county human capital management) went live June 2012 for the first payroll run in FY 2013. The Transparency application targeted for after Phase 1 a go-live and a cycle of transactional data. Research was conducted by county and schools staff on best practices on the Web for reporting integrity, common sense usability standards, and open-government goals. Transparency will launch in FY 2014. Work on Phase 3 items including public budget formulation and schools HCM are deferred for later implementation. A consolidated expert business group of the core business agencies and a core expert technical center in DIT were established in 2012 to manage the system and to manage on-going efforts to leverage system opportunities.

This initiative was a bold achievement that included a county government and school system consolidated 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 provided as needed aligned with the phases of this multi-year project at the appropriate time to ensure milestone payments are met.

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), Manger Self Service Portal (MSS), and enhanced supplier relationship management functionality provides 24 hour transaction access. Also, with role based access, system process, data definition and stewardship as well as and security is enhanced. Immediate benefits also allow for more real-time system replication replacing older 'disaster recovery' and to meet modern standards required of financial rating standards organizations for controls and financial management. Long term opportunities remain in gaining operational improvements and transparency goals for many years to come, to include in the areas of budget projections and publication, performance management initiatives, and decision support.

2G70-053-000 Retirement of Legacy Systems (IT0088.00)

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 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. The work accomplished received industry recognition including from two multi-national corporations.

Project Budget

Funding of $400,000 is provided in FY 2014 to continue support for this multiphase initiative.

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, date center operations, and utilities.

2G70-069-000 Personal Property Business, Professional, and Occupational Licensing – Tax/Revenue Administration (IT0092)

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

Project goals are to eliminate the technology risks and functionality gaps of existing legacy mainframe systems: Personal Property and Business Professional and Occupational Licensing. The current systems designed and developed during the 1980s and 1990s use outdated technology and programming languages, which have reached the end of their viability.

Progress to Date

Milestones (Projected)

- Application assessment – July 2013
- Oracle database conversion – December 2013
- Web application development – June 2014
- User acceptable testing – July 2014
- Production Implementation – January 2015

Project Budget

Funding for $800,000 is provided to support project activities in FY 2014.

Return on Investment

The project will facilitate improved customer service without the addition of staff. Staffing can be held constant as inquiries and correspondence increase as a result of population growth, and changing demographics. Citizen inquiries will be more effectively managed, and response turnaround times improved. Application and System enhancements would enable the county to provide the level of customer service Fairfax citizens and businesses have begun to request. Use of web technologies to provide self-service functions, increasingly used by county citizens and businesses to interact with county systems, will become viable for both Personal Property and Business Professional and Occupational Licensing. Automated integration with other county and State systems and system modifications, required by changes in State and county code, would be more easily managed and deployed without impact to county citizens.

3.4 Technology Infrastructure

2G70-018-000 Enterprise IT Architecture (IT0022.15)

Project Description

This project supports the strategic infrastructure and expert services required for 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 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, middleware, document management, and the web services for seamless performance of 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.

Progress to Date

A modern system landscape and server environment was engineered, acquired and installed in FY 2012, 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 support services will continue in FY 2014.

Project Budget

FY 2014 funding of $2,500,000 is provided to support all areas of expert support, on-going system and landscape transformation and stability activities.

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. Automation and modernization of county systems empowers both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information and provide effective service to the citizens and the community. This project assists the business transformation process with modern technology infrastructure and required expertise to implement the new applications on consolidated platform, and enable the county to incorporate fully integrated best business practices, improve operations, improve the quality and accessibility of information.

2G70-026-000 Public Service Communication Technology Refresh (IT0050)

Project Description

This project provides continuing support for the Public Service Communications 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), FASTRAN and the Fairfax County Water Authority – approximately 3200 uses. The current Public Service System is now nearly 10 years old and does not have sufficient call processing capacity to meet current end user airtime requirements. This system refresh increases call processing capability using software Time Division Multiple Access (TDMA), which will provide a 50% increase in system call capacity, without increasing the number of RF channels that it utilizes. Increasing the call capacity will extend the system's useful life so that it can meet the current and future airtime demands of the Public Service/local government fleet and continue serving as a backup to the new P25 IP Public Safety Radio System. Planning and initial configuration for this refresh will commence in FY 2014. Funding is already available in the current budget to accomplish these activities. However, it is anticipated that additional funding will be required in FY 2015. A comprehensive planning and funding for this project will be instituted for the FY 2015 Budget.

Project Goals

The county's public service radio system is still based on the older circuit-switched analog technology and needs to be converted to an IP-based system. Additionally, radio systems are now comprised of COTs server based technology, which permits hardware and software upgrades over the life of the system rather than the previous need to do a complete "forklift" conversion when a need arises to increase capabilities for the system. This newer technology eliminates having to have a financial roller-coaster in providing funding at a given time for a complete replacement rather than spreading the cost evenly across the system's life. Refreshing the Public Service System will substantially reduce the need for major system upgrades or replacements and correspondingly reduce the county's financial obligations for the future.

Progress to Date

DIT, in conjunction with Motorola and Fairfax County Schools, have developed an initial technology refresh plan which permits utilizing parts of the new Public Safety Radio System's Master Site/Core Network to fulfill some of the requirements for the Public Service System and more closely aligns the two systems. This plan will be updated over the coming months and will be used to establish the new Public Service Radio refresh requirements for the FY 2015 Budget. The planning process included development of preliminary requirement specifications, and identification of any required FCC licensing activities. Motorola has presented the county with a proposal based on the above, identifying services, equipment, and anticipated costs.

Project Budget

Funding is available in the FY 2014 budget to provide for the on-going operational requirements including site leases, inter site network charges, and system maintenance, as well as provide for meeting the planning and initial expenses. As in the past, Fairfax County Schools have agreed to provide funding for their share of the cost of the refresh which includes 50% of the cost of the infrastructure, as well as funding their entire fleet of mobile and portable subscriber radios. This greatly reduces the county's financial obligation.

Return on Investment

The refreshed system will increase the processing capacity of the current system by 50% without adding new RF frequencies and reduce the out-year coast associated "fork-lift" system replacements going forward. This new system will provide the necessary protection and safety for bus drivers and other staffs that depend on reliable communications; continue to align the Public Safety and Public Service Radio Systems to provide enhanced backup capability; improve customer service to county citizens and other county agencies; reduce reliance on commercial wireless networks; and most importantly provides 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 radio system, allowing direct communication between public safety and public service users for incident or disaster management.

2G70-036-000 Remote Access (IT0058)

Project Description

This project provides county staff enhanced and expanded remote access to county systems to facilitate field activities for agency staff, telework, and remote access in case of regional emergency events or possible pandemic outbreaks.

Project Goals

An enterprise-wide standardized remote access control methodology provides a solution for employees and external system users to access county networks by authenticating user identity in order to gain access to relevant data and conduct secure on line business with the county. All user authentication and authorization management is policy based and centrally managed allowing for comprehensive audit and reporting services to support and log information on the extensive user base. This project supports increased security, simplified management, rapid reporting and data analysis, and secure access from remote locations.

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

FY 2014 funding of $100,000 is provided for the remote access project.

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.

2G70-038-000 Telecommunication Modernization (IT0060)

Project Description

This project continues the implementation of Fairfax County's strategic goal of providing Voice over IP (VoIP) services over the county's fiber optic network – I-Net. This strategy includes a scalable architecture that supports a variety of county sites and agency business requirements using IP-based telephone service. The plan is in full alignment with the county's principle of implementing contemporary, but proven, technologies, optimizing IT investments and fostering operational cost efficiencies.

Project Goals

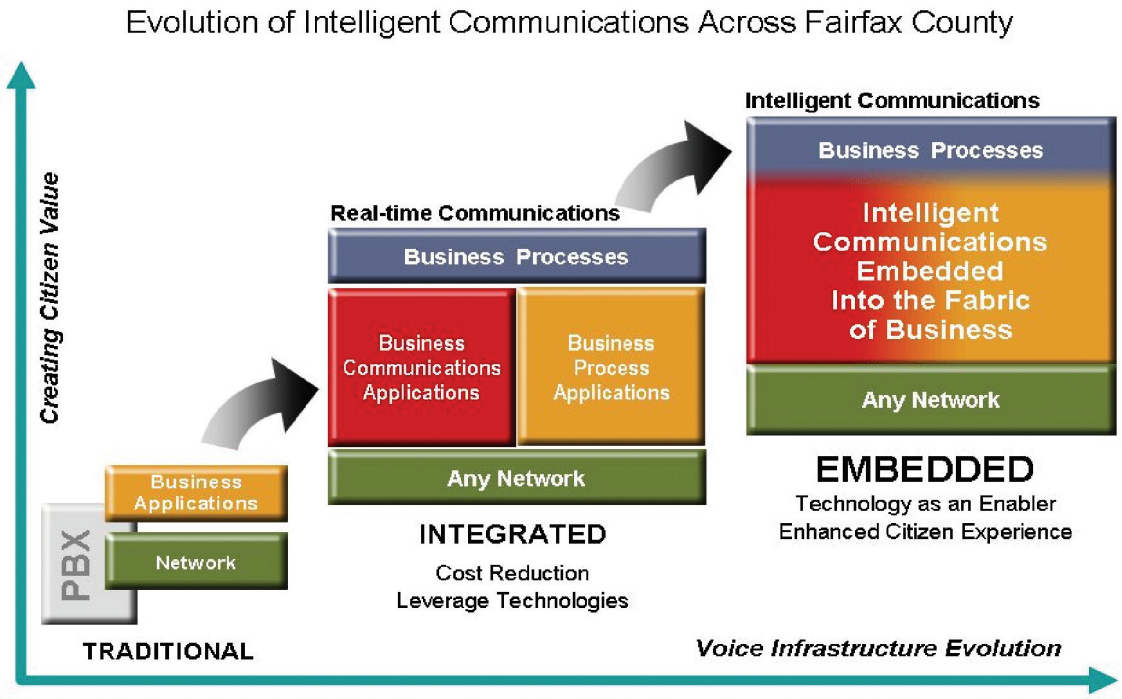
The strategic goal of this project has been to move Fairfax County towards a flexible voice solution underwriting the use of Voice over Internet Protocol (VoIP). Fairfax County's IP enabled enterprise-class platform provides the county with the ability to adopt newer cost saving services such as Session Initiation Protocol (SIP) Trunking. The county's new architecture has yielded a flexible yet stable infrastructure that will be the foundation for the eventual evolution to full broadband network architecture.

The new voice platform also provides a foundation for more complete wireless integration. The voice network is now capable of incorporating a wide variety of smart phones, tablets and mobile devices. Wireless devices can be seamlessly integrated into the enterprise voice network giving users: one number capability enhanced messaging – including visual voicemail, access to the corporate directory, VIP lists, synchronized call logs and contacts; and provide presence/availability information across the network.

The county's enterprise-class voice platform touches approximately 16,000 telephones, fax machines, private lines and devices used by Fairfax County employees.

Progress to Date

The infrastructure build out addressed in the initial project documents was completed on December 12, 2012.



FY 2014 Goals:

- Transition to SIP Trunking
- Upgrade Avaya platform and its adjuncts to current release levels

Project Budget

FY 2014 funding is not required. Existing project balances and cost savings from lowered telecom circuit costs will carry the project to conclusion.

Return on Investment

The cost reduction benefits derived from the implementation of this project are quantifiable and substantial. Direct cost savings include: reduction in leased circuit costs; a reduction in message unit costs for outside phone calls; and a reduction in overall maintenance costs, including moving phones, adding new phones and changes to existing phone service. In addition, the new voice infrastructure allows Fairfax County to leverage embedded technology assets and to improve service delivery quality. Business processes will be streamlined because of the ability to share information over an integrated communications platform. Further significant savings are projected as the county begins moving its connections to the public switched telephone network (PSTN) from ISDN PRIs to SIP Trunks.

IT-000003 Data Loss Prevention Project

Project Description

Data Loss Prevention (DLP) is an IT security technology solution that discovers, monitors, and protects confidential data wherever it is stored or used on the network, storage and endpoint systems.

Project Goals

DLP will reduce the risk to confidentiality, integrity and availability of data to include sensitive data. DLP reduces the risk/chance of loss of protected data or compromise from Outbound threats via hidden malicious attempts to mine county data. DLP provides the mean to configure warnings or can prevent users from copying sensitive data to unauthorized CD/DVD's or USB drives, which in turn can then be physically taken out of the control and protections of the county's endpoint security solutions. DLP coupled with existing Endpoint protection, Network Security solutions and Perimeter defenses will enhance the Defense in Depth deployed in Fairfax County's

Enterprise system. The implementation of Data Loss Prevention will result in reduced compliance costs, auditing costs and the Total Cost of Ownership.

Progress to Date

This is a new project in FY 2014. DIT conducted solution research over the past year and has determined the best approach.

Project Budget

FY 2014 funding of $500,000 is included to support the implementation of the Data Loss Prevention Solution. In data leakage incidents, sensitive data is disclosed to unauthorized personnel either by malicious intent or inadvertent mistake, which can occur through the wider availability of commonly used internal communications channels and internet based capabilities. Such sensitive data can come in the form of social security numbers, HIPPA protected patient information, credit-card data, and other sensitive county information. Since the project plans are to deploy the software at the client level, the solution will be capable of discovering sensitive information locally on a system prior to any potential use of encryption for transmission.

Return on Investment

The loss of personally identifiable information, personal health information, or payment card information carries great potential for financial loss and public confidence in government, which could affect financial ratings, contracts, compliance and regulatory requirements. Such incidents have occurred in federal, state and local governments resulting in significant negative impacts including litigation which can impact operations and/or prohibit certain services, or opportunities, revenues and expenses for many years, such as fines, additional security and audit requirements, and other liabilities directly related to the loss. A privacy and information management research firm states the average organizational cost of a data breach was $5.5 million in 2011 and cost organizations an average of $194 per compromised record. Adding a DLP implementation as an enhancement to enterprise security offers discovery, monitoring, detection, and protection capabilities that can assist with the proper management and protection of sensitive information, help mitigate the risk of potential data loss, and improve operational integrity.

IT-000005 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

Automate security monitoring and provide real time visibility of system access controls for the county's new FOCUS system via a dashboard.

Progress to Date

To achieve the final goal to automate security monitoring and provide real time visibility of system access controls for the county's new FOCUS system via a dashboard, there are multiple GRC modules to be implemented.

To date GRC Access Risk Analysis (ARA) has been installed in pre-production and production environments. This allows for generating Separation of Duty (SOD) reports on SAP standard and customized transactions. The SOD reports are being reviewed by business owners, and remediation / mitigation steps are being implemented.

The next modules for GRC are being planned.

Project Budget

FY 2014 funding of $750,000 is included to support the GRC Auditing solution required for the county's annual financial audit in order to identify and address audit findings regarding management controls for security and legal compliance. 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).

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, thresholds, and appetites, minimized impact and duration of risk events and decreased cost and effort of compliance, risk, and audit programs covering its SAP financial, procurement, treasury, human resources and payroll systems.

3.5 Human Services

2G70-008-000 Document Management and Imaging – DFS (IT0011.9)

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 is the Self Sufficiency Division; Phase II is the Children Youth and Families division; and the Office for Children division is a separate Fund 10040 project (2G70-009-000).

Project Goals

Goals of the project are: a) to provide a reliable and secure system for cataloging, archival and retrieval of sensitive Family Services documents for case management, and, b) 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 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. It is anticipated that training and implementation will be completed by 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.

<u>Phase I – Self-Sufficiency Document Management and Imaging:</u>

- Development efforts completed – winter 2008-2009
- User Acceptance Testing completed – Summer 2009
- End user training and phased implementation – late summer 2009
- Production go live and continued end user training – Fall 2009
- Completed user training and phased implementation at four sites – Fall 2010

<u>Phase II – Children Youth and Families Document Management</u>

- Finalized vendor statement of work for requirements analysis complete – Spring 2011
- Request cost proposals complete – Fall 2011
- Prepare project schedule complete – Winter 2012
- Design and development of system solution complete – Summer 2012

- User Acceptance Testing complete – Fall 2012
- End User Training – Fall 2012 to Spring 2013
- Phased Implementation – Fall 2012 to Summer 2013

Project Budget

Existing project balances were used to purchase enterprise Document licenses for the CYF implementation. Funding within Family Services budget will support remaining deliverables for this project.

Return on Investment

Cost savings will be realized as a result of improved processing of paper documents, use of staff time, and reduced error rates for more effective and efficient document management. Imaging and workflow project are expected to increase the security of records, promote telework; reduce case filing errors and reduce the space requirements for maintaining paper copies of documents. With the increased availability of accurate, records, social workers will be able to more easily access case records that will result in increased productivity.

2G70-009-000 Document Management and Imaging – OFC (IT0011.10)

Project Description

This project provides for the Department of Family Services' Office of Children's (OFC) Electronic Records Management system. In FY 2007, the project transitioned Community Education and Provider Services, and the Child Care Assistance and Referral program to document imaging technology (Phase I). The second phase of this project includes the Head Start, School Age Child Care program, and the Director's Office.

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. This phase also includes imaging the files in the Director's Office.

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. Head Start, SACC Licensing, the Director's Office and SACC children's files have been delayed due to budget constraints.

Project Budget

No additional funding was approved in FY 2014.

Return on investment

Imaging and workflow projects increase the security of records, protect sensitive information from unauthorized access; reduce staff time required for retrieval and refining 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 CSB Initiatives (eHR) (IT0054)

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).

The CSB – HIPAA Database Consolidation project 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.

Progress to Date

SYNAPS was replaced with Credible in 2012. Requirements and design for the CSB HIPAA Database Consolidation will continue in FY 2013 with an FY 2014 implementation schedule.

Project Budget

Additional funding was not requested for FY 2014.

Return on Investment

The CSB HIPAA Data Consolidation data repository will provide a more secure and scalable solution to enable multiple departments to store HIPPA-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 – OFC (IT0059)

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 $2.7 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 lifecycle 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).
- 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 to develop a custom solution for OFC. The project timeline is as follows:

- Project Kickoff and Requirements Analysis and Design – Summer 2013
- Application Development and Configuration – Summer 2014
- Acceptance Testing – Fall 2014
- Training – Fall 2014
- Production and Data Migration – Winter 2015

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.

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.

2G70-051-000 Data Reporting Project - DFS (IT0089)

Project Description

Department of Family Services (DFS) is the largest of the county's human services agencies. DFS provides a vast array of programs and services through its four major divisions – Self-Sufficiency; Adult and Aging; Children, Youth and Families; and Child Care – as well as through the department's other components including the Office for Women and Domestic and Sexual Violence Services, the Comprehensive Services Act, and Disability Services Planning and Development. An intensive strategic planning process identified the need for a more integrated use of information technology systems. Currently multiple IT systems ranging from mandated Virginia Department of Social Services case management systems to customized off-the-shelf systems to locally developed and maintained databases are used to support the department. A data warehouse will provide a systematic means to retrieve and analyze data, to extract, transform and load data and to create management reports that will increase efficiency and effectiveness.

Project Goals

Goals include development of a data warehouse to enable effective management of information reporting from various disparate DFS systems. This project will enhance security and efficiency within DFS by providing standardized, consistent, clean and integrated data sourced from ultimately 30 distinct departmental IT systems. The data will be structured to address the reporting and analytical needs of each division and the department.

Progress to Date

Requirements assessment will continue in FY 2014; with a working pilot scheduled for completion by summer of 2014.

Project Budget

No additional funding is provided for FY 2014.

Return on Investment

A data warehouse will provide a standardized, consistent, clean and integrated form of data sourced from various operational systems in use in the department, structured in a way to specifically address the reporting and analytic requirements of each of the divisions as well as the department as a whole. The system will streamline processes, improve communication and data sharing, reduce dual data entry, enhance collaborative decision making, improve data quality, and enhance overall service delivery and better customer service.

2G70-055-000 Volunteer Management System (IT0091)

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

The contract was awarded May 9, 2012.

Milestones

The project milestones are as follows:

- Contract kickoff and project preparation – spring 2012
- Gap analysis, detailed project planning and design completed – summer 2012
- Completed the implementation of the Health Department MRC volunteer program to include the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) program – winter 2013
- Completed the first phase of the Electoral Board volunteer program to recruit new volunteers for the June 2013 Election – spring 2013
- Implementation or the Enterprise-wide requirements – spring/summer 2013
- Implementation of the remaining Phase I agencies – winter 2014
- Phase II will integrate 3 additional county agencies – summer 2014
- Implementation of additional county agencies and external organizations - beginning fall/winter 2014

Project Budget

Approved FY 2012 funding of $200,000 has been carried forward to FY 2013 to fund Phase I of the project. Approved FY 2014 funding of $175,000.00 will be used to fund the implementation of subsequent county agencies.

Return on Investment

With over 1million 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.

3.6 Planning and Development

2G70-040-000 Facility Maintenance Management System (IT0065)

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 base, "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. DAHS will provide funding for additional licenses from agency operating funds.

Progress to Date

Work completed:

- Portfolio and Demand Maintenance module was implemented – March 2007
- Planned Maintenance and Space Management modules was completed – June 2009
- Real Estate Leases module was completed – August 2009
- Initial phase of the Capital Project module was completed – December 2009
- Last phase of the Capital and Facility Project modules was completed – Spring 2010
- A Syclo Server to deploy the Tririga wireless application and the wireless device management software was installed; however, testing has been postponed because of the need to upgrade the Tririga application to meet the FOCUS requirements – see below
- Remaining work: Implementation of the Syclo wireless application and the deployment of the 200 wireless hand-held devices to the FMD and Park Authority field staff. This last phase of the CIFM project is scheduled to be completed as soon as contracts are updated.

Project Budget

FY 2014 funding is not provided.

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 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 request and inquiry interface will save time for staff in terms of handling customers' status inquiries and work order processing from initiation to close out. With the implementation of this system, duplicate work orders, work performed by vendor for inventory that is under warranty and multiple tasks on work order will all equate to savings by cost avoidance.

SECTION 4

MANAGEMENT CONTROLS AND PROCESSES

MANAGEMENT CONTROLS AND PROCESSES

FEATURED IN THIS SECTION

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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 ITAG recommended 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 software, hardware and services required for 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)
- 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)
- Creation of an internal Senior Executive IT Steering Committee (FY 1999)
- Launch of an internal project management certification program (FY 1999)

- Creation of an enterprise technology architecture committee (FY 2001)
- Creation of an IT Investment Portfolio Management position in DIT (FY 2002)
- Creation of 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 and 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 that addresses 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 Leadership position and Governance structure (Courtroom Technology Governance Board (FY 2007)
- Established Public Safety IT Governance Board, and, Public Safety IT Architect (2008)
- Enhance Change Management and configuration Management Processes (FY 2008)
- Released new strategic plan and updated Systems Development Life Cycle Standards (SDLCS) (FY 2008)
- Established Leadership for National Capital Region Interoperability Initiative (FY 2007)
- Established FOCUS Project (County and Schools) Steering Committee (FY 2008)
- Develop Technology Strategy Map (FY 2009)
- 'One Web Team' established; integration of e-Gov staff with Office of Public Affairs web-content functions in adopting new WEB capabilities.
- Study of IT positions and resources county-wide (2011)
- Established best practices SAP Technical Competency Center in DIT to support FOCUS (2012)
- Restructured IT Portfolio Management function to an Enterprise Program Management Office (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, including the County Libraries, Department of Cable and Consumer Services and the Office of Public Affairs who partner with the Department of Information Technology on public access technology capabilities and the e-government program, and the Environmental Coordinating Committee (includes Green IT opportunities and results).

The Director of the Department of Information 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 initiatives 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, supported also 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 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, initial project recommendations 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 information project proposals submitted for funding. Project 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;
- Ensure that proposed project timeframes, 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 utilizing 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's recommendations are included as part of the Budget Adoption process. ITPAC develops a letter supporting the strategy and themes for the proposed project funding package to the Board of Supervisors. The Board makes the final decision on funding based on alignment with the Board's goals and recommendation of the County Executive.

As stated previously, 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 placed into requesting departmental budgets. The department can then use these funds to undertake the project internally with existing staff or contract for services if necessary. Agencies can request that DIT manage the project if that is the best course. 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.

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 hold regular meetings and report progress and issues. All projects must follow the county's standards and project methodology as defined by the CTO in the county's IT standards. Formal architecture standards have been developed that provide further guidance to the project managers. This process is managed by the IT Portfolio Manager in DIT.

The county formally certifies business practitioner project managers through a project management certification course developed by DIT, which certifies business agency staff to lead projects at different dollar thresholds. The certification focuses on project reporting and administration, contract negotiation and management, technical architecture, business process redesign, task planning and other topics. 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 member's 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 over sight in tracking project performance, contract requirements, and technical guidance from the Project Management Office (PMO) function in DIT.

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, training and certification
- Project Steering Committees
- Collaboration between agencies and DIT
- Portfolio management
- Architectural Review Board
- 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.

4.2 Strategic Planning Process

In FY 2004, DIT assembled a departmental 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. The team was organized into external communications team, internal communications team, and IT research and development team. The resulting efforts of this initiative complemented the annual process for development of 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, and industry trends. 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 ffectiveness 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 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. To review these values, goals and initiatives, refer to the Department of Information Technology Strategic Plan, October 2003.

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.
6. Citizens require "around the clock" access to information and services through a variety of convenient delivery channels.
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. Essential components of each initiative are identified to facilitate the development of agency policies and processes as DIT seeks to achieve its key objectives. The successful adaption 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.

A major challenge is the development of comprehensive performance measurement systems. Working to overcome these challenges is a strategic priority as the importance of developing performance measurements is fully recognized. Projects have been launched for both initiatives and performance measures that will result in improvements and alignment with the intended direction of the department and the county in a continuous improvement mode.

DIT is in the process of refreshing its strategic plan, balanced score card, and dashboard. Key elements of the updated plan include the strategic direction of the agencies served, and how agency strategies will necessitate changes in DIT's future infrastructure plans, the development of IT resources, and reduction 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 more effective IT investments and optimizing IT funding processes
- Resolving emerging business problems while leveraging the existing technology investment
- 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

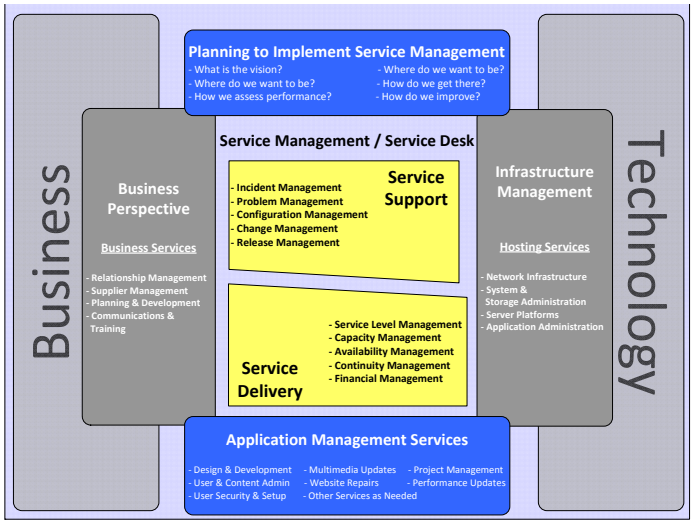
The **Architecture Review Board was established** In FY 2005, in DIT to provide oversight of all county architecture and infrastructure standards, policies, and directions. The responsibilities of **(ARB)** include application development architecture, infrastructure and information architectures, security architecture, emerging technology, process and data modeling, integration and interoperability methodologies, technical standards, and System Development Life Cycle Standards (SDLCS) 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.

The purpose of the Architecture Committee is to address IT architecture issues countywide and to propose IT architectural goals, standards and guidelines for consideration in implementing IT projects and initiatives throughout the county. 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, BYOD, other infrastructure, and security.



ITIL and IT Service Management Framework

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. 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 (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 WEB 2.0, open source, and WEB 3.0 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.

A value implicit in the SDLCS is the importance of using the expertise of the project manager (PM) to select the appropriate outputs. While a minimum number of document deliverables are mandatory, the PM must select others appropriate to the individual project. Furthermore, SDLCS promotes accountability. The last phase of the Standards, the Evaluation Phase, includes a post-implementation review to ensure that the project has met its requirements and lessons learned on how the application development standards can be improved. Periodically, selected IT projects are reviewed internally by DIT business and technical staff. In addition, the Fairfax County Internal Auditors may review randomly selected projects.

Description of the Standards and Process

The SDLCS form the basis for making the development of applications in Fairfax County a consistent, repeatable process. The SDLCS provides a framework for application developers outlining he important procedures necessary to complete an application. Using SDCLS as a starting point, the Architecture and Planning team leads the effort to reformulate a methodology of procedures that should be followed and their execution. The SDLCS is reviewed for updating as necessitated by changes in technologies.

The eight phases of the Fairfax County Systems Development Life Cycle are:

1. Preliminary Plan
2. Define Requirements
3. Design
4. Develop
5. Test
6. Implement
7. Support
8. Evaluate

The SDLCS also includes requirement for change management processes, system resiliency or disaster recovery options.

Each phase contains multiple steps; each step has one or more outputs. The standards can be found on the Fairfax County Web Site on the Department of Information Technology Main page at the following address: www.fairfaxcounty.gov/gov/dit/sdlcs.htm

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 mangers' 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 the early 1990's the county's internal audit office reviewed several information technology projects, and recommended that the county:

> *Establish a countywide IT Project management-training program in consultation with IT Project Management professionals. Provide training to both DIT and agency personnel prior to undertaking extensive IT projects "AND"- establish industry approved guidelines for assignment to the role of IT project manager.*

This need was further highlighted in late 1996 in a consultant's report released on December 17, 1996 entitled, "Renewing Fairfax County: An Organization and Staffing Evaluation of Fairfax County Government." On March 7, 1997, the County Executive's response to the Board of Supervisors about the study included:

(1) "The DIT will establish an Information Technology (IT) Project Manager training and certification program within 3 months----, with certification of a cadre of IT Project Managers within 6 months. " AND

(2) "DIT and agency personnel would not be assigned project management responsibilities until certification requirements have been completed. Curricula will include classroom and on-the-job training elements,"

In 1997, DIT reviewed project management practices and conducted a survey of county information technology managers to determine the type of knowledge and skills needed to enable county staff to function effectively as project managers. Based upon the results of the review and survey, a county project management training program and the associated course content was designed and implemented. In 2001, the county's IT Project management (ITPM) training program was redesigned to include the project management core competencies outlined in the Project Management institute's (PMI) body of knowledge (PMBOK). PMI is the recognized leader and credentialing organization for project management professionals. Fairfax County's new ITPM training program incorporated current industry approved ITPM practice to ensure high quality project outcomes. Additional enhancements are made each year as technology and best practices evolve. In recent years emphasis has been placed on managing risks, IT security, organizational change management, and business process redesign. The training program consists of ninety-six (96) hours (12 days) delivered over the course of 8 weeks by county staff and a project management professional. The overall objective of the IT Project Management course is to provide IT project managers with a foundation in basic project management concepts, principles, and practices to effectively and efficiently manage IT projects.

The core content areas covered 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

Training is provided to those individuals who are currently, or will soon be managing an information technology project. Staff are identified by their agency director and selected through a formal nomination process. The training program is currently institutionalized and is normally conducted once a year. Approximately two hundred and sixty (260) Fairfax County and local government IT professional have completed the program and met certification requirements. The Fairfax County IT Project Management Certification is awarded to participants in recognition of full participation in the ITPM course. The county's certification is customized for its IT Project management operations. Certification is based upon class participation and achievement of the course objectives. The project manager acquires a clearly defined set of core competencies related to ITPM by attending all IT project management classes in their entirety. This includes the successful completion of a hand-on Microsoft Project desktop training course. Certification in IT Project Management is the basic requirement for managing all levels of IT projects in Fairfax County. Once certified, an individual is given responsibility for the project management process from initiation to closure. The county's IT Project Management training program provides that methodology for achieving high quality IT results utilizing county and contracted resources effectively and efficiently.

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.

The IT Project Management Training program is offered when there are new projects in the IT Plan. In yeas where there are no new projects funded, 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 2014-15.

In addition, DIT provides training funds for agency-based IT analysts for key technologies.

SECTION 5

INFORMATION TECHNOLOGY ARCHITECTURE

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FEATURED IN THIS SECTION

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INFORMATION TECHNOLOGY ARCHITECTURE

5.1 Enterprise Architecture

This section identifies current information technology architecture implemented 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 new technologies in response to the changing needs of government business. It is a multi-layered architecture that includes:

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

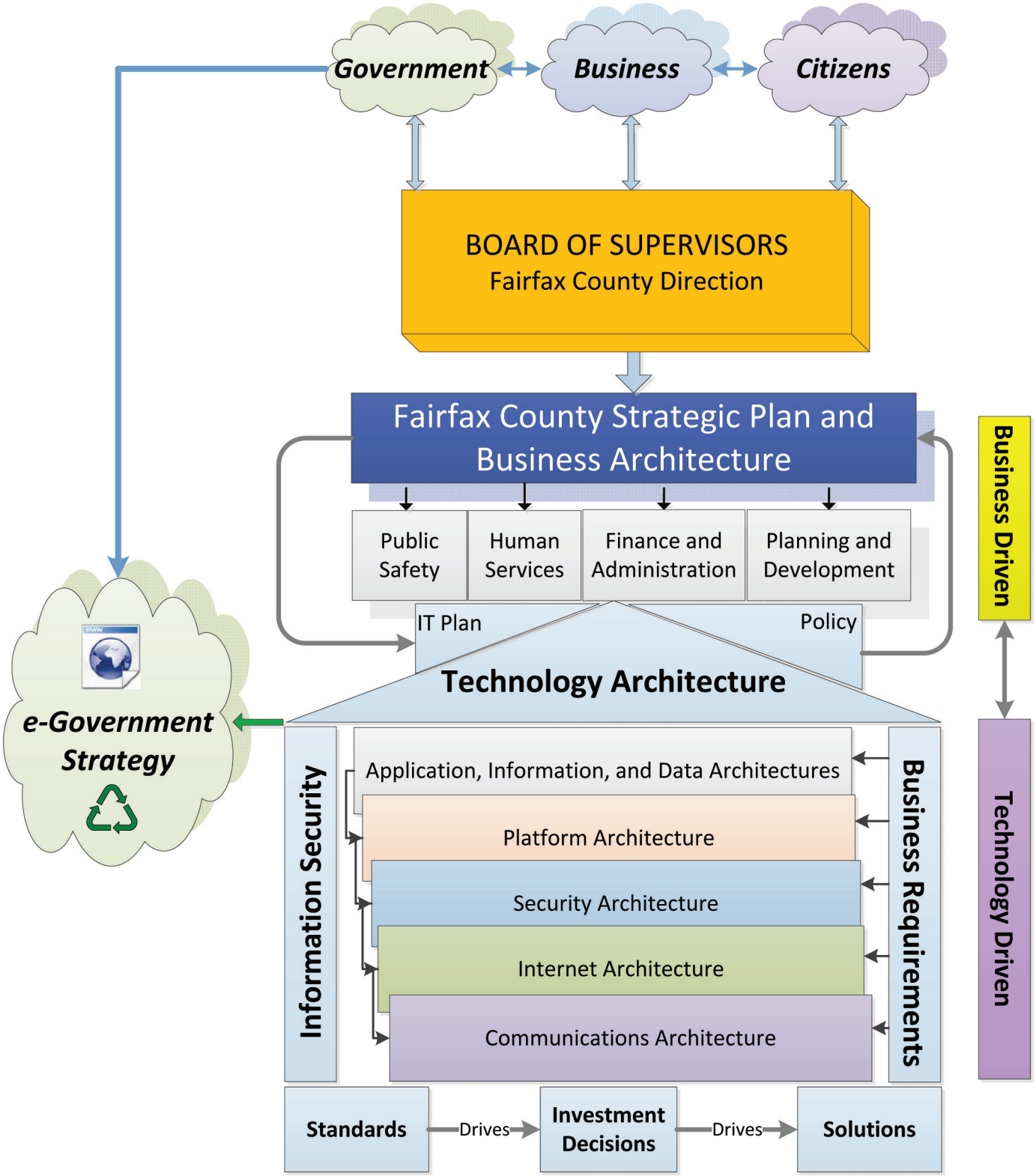
Enterprise Architecture Process Model

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 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; 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 is based on the following Mission Statement that directs the county's information technology activities. Every 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."


Government
Business
Citizens
BOARD OF SUPERVISORS
Fairfax County Direction
Fairfax County Strategic Plan and Business Architecture
Public Safety
Human Services
Finance and Administration
Planning and Development
IT Plan
Policy
Technology Architecture
Business Driven
e-Government Strategy
Information Security
Application, Information, and Data Architectures
Platform Architecture
Security Architecture
Internet Architecture
Communications Architecture
Business Requirements
Technology Driven
Standards
Drives
Investment Decisions
Drives
Solutions

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, 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. In Fairfax County a vast inventory of enterprise-wide and agency specific applications reside on mainframe, server, 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, or, business organizations and related functions reorganize and/or have new needs.

The county's goal is to use industry standard application development tools and language environments that are adaptive in web-enabled models. The Application architecture also protects the county's investment in 'classic' systems by enabling enhancements that enable enhanced usability, improved 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 new 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 current 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 WebMethods and Microsoft BizTalk allow virtually unlimited ability to share, incorporate information and business process 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 to 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 map creating 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.

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 are currently under development using 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 uses webMethods and Microsoft BizTalk to help with the integration of applications at the presentation, business logic, and data layers. Documentum is the county's enterprise content and document management software solution standard. The county also supports REAMS imaging solution.

Since often times there are no viable COTS or SaaS available that meet county agencies' unique governmental business needs, 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.

Collaboration Tools – The county uses Microsoft SharePoint and Office Communication Suite which includes instant messaging and web conferencing. Additionally, the county uses other video conferencing and web conferencing tools to support collaborative communications. ThinkTank is used for Group session Collaborative Software for Group Decision Support. Groups use the computer-supported meeting center software to conduct process improvements, strategic planning, program evaluation, and vendor selection sessions.

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. However, there are also "fat client "and web-based agency specific applications that are maintained separately by agencies. Most of small agency applications use Microsoft Access or Microsoft SQL Server as the database and programming language architecture.

Enterprise Decision Support Systems and Business Intelligence – The county's portfolio currently contains several products used for reporting, analytic, and decision support. Business Objects / Crystal Reports, SAS, QMF, SQL Reporting Services are the currently-supported tools for enterprise reporting, basic ad-hoc query, and departmental reporting. Many of these products were acquired through COTS solutions with embedded tools. The proliferation of tools and the associated support, training, and infrastructure costs present a strong business case for rationalizing the portfolio, consolidation and virtualization. SAP-BOBJ will provide reporting and BI across the enterprise ERP applications. 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, 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, implemented in 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 county employees centralized portal for computer support. InfraEnterprise (BMS) is the web-based solution 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 into FY 2013. Servers include UNIX (Sun Solaris) and HP UX, Microsoft Windows /2008, 2008R2 and z/OS mainframe. 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 7 operating system. The total data storage requirement has grown from 394 gigabytes in 1998 to the current total of over 1.3 petabytes. The county supports over 1,000 State and other non-county Windows workstations hardware devices. The following paragraphs describe the major features of the county's platform architecture.

5.3.1 Platforms

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 MSOffice 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. Windows 7 and Windows Mobile, iPads, Droids are currently being deployed. Windows 8 will be deployed in 2013-14.

Desktop and network printing is accomplished primarily through the county's enterprise multi-function copier/printer/scan/fax machine fleet. Agencies also use standalone desktop or work-group printers, and special use machines, i.e., plotters, etc.

LAN-based Network Servers – Fairfax County's enterprise server environment uses Intel and Unix-based servers. Enterprise-class server technology (e.g. UniSys ES 7000, DELL/IBM Blades, 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 servers to the virtual environment. Virtualization in the SUN/Solaris environment in form zones has been implemented.

5.3.2 Storage Area Network

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 severs (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. The county recently enhanced storage by implementing NetApp and IBM XIV storage systems, which positions the county for

future growth and the ability to meet strategic initiatives for Data Lifecycle Management.

Storage Management requirements addressed by the 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,

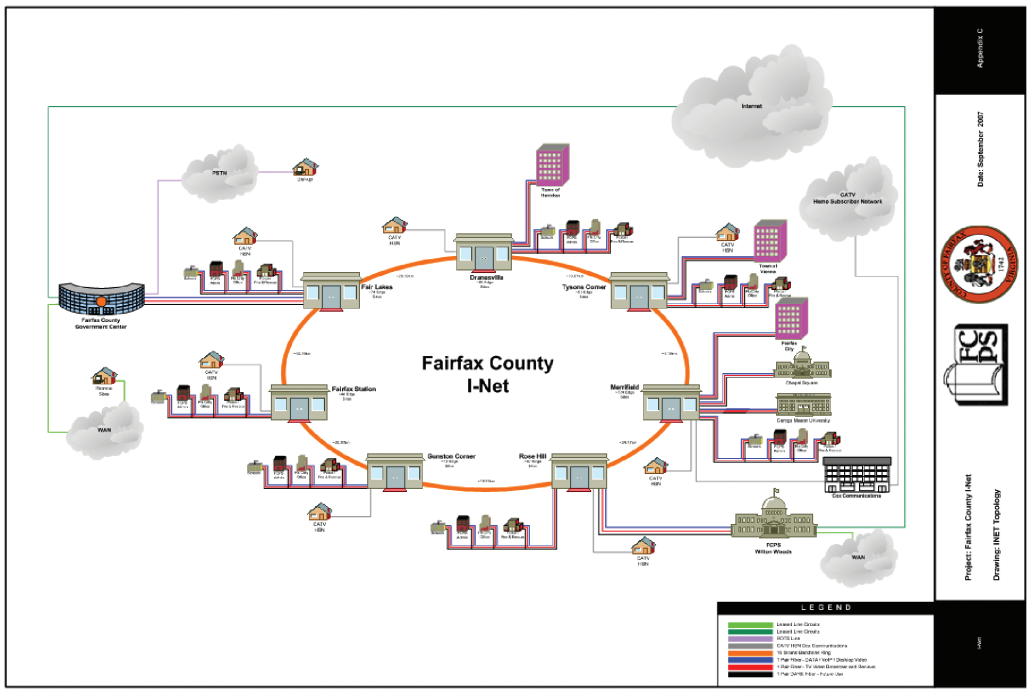
non-broadcast SSID's, NAT and MAC address registration, and digital certificates are required to gain access to the private WLAN. VPN technology is employed to protect data over commercial services.

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. In FY 2010, native Ethernet connectivity was implemented directly to the mainframe eliminating the need a dedicated Cisco router using CIP (Channel Interface Processor), supporting communications of the TN3270 (Telnet) sessions.

5.4.2 Institutional Network (I-Net)

The county's network backbone (I-Net) is the primary infrastructure for the enterprise communications network (above), 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 becoming the "super highway" for the county's internal video, voice and data communications. The virtually "unlimited" bandwidth 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.

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 computers 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 750+ mobile devices.

Like a growing number of major local governments, the county applied for a FCC Waiver for use of 700 MHz for Public Safety broadband. 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. The county continues to accelerate its efforts, and is currently evaluating responses to an RFP for a vendor so assist the county to build a Public Safety Private Wireless Broadband Network using the D-Block allocation.

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 allow 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 being implemented integrated with the enterprise network. Symantecs 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 for a Public Service Radio System Upgrade will begin in FY 2013 with implementation commencing in FY 2016.

The past two years county staff in conjunction with Motorola Systems has been implementing the Public Safety Radio system upgrade project which is scheduled for completion in October 2012. This new system incorporates a digital IP-based technology permitting improved data access and system management, better integration with the new 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.

The FCC mandated 800 MHz re-banding effort is targeted for July 2013. County staff not only manages the county's –systems transition, but also serve is the Regional Coordinator for the entire National Capitol Region's re-banding effort to assure that regional interoperability is maintained.

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 and 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) by residents, business, and others via the Internet.
- **Public Access Web Server** – 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 server also acts as the distribution or collection point for information obtained from or provided to enterprise databases via an "Application Server".
- **Intranet Web Farm** – The county InfoWeb Intranet Web farm provides a portal access to county information and applications for agency and employee use.
- **Mobile Web Farm** – provide mobile phone users with information made available by county agencies via Web Content Management 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.
- i**Phone Application Infrastructure** – iPhone Application for release 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 county to provide m-government services.
- **Interfaces** – between the county application servers and the 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, MS Access, DB2 and VSAM. The interfaces are comprised of "Application Program Interfaces" (APIs), Open Database Connectivity (ODBC), 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) detect intrusions within the network, and 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 lag 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

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. In some cases, 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 June 2013

FAIRFAX COUNTY INFORMATION TECHNOLOGY ARCHITECTURE
PLATFORM ARCHITECTURE: END USER SOFTWARE

Component	Environment
Operating System	Windows 7 / 8
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 Outlook Web Access (latest release)
Project Management	Microsoft Project Professional (latest release)
Graphics	Microsoft Visio Professional (latest release)
Web Browser	Microsoft Internet Explorer – IE8
Antivirus	Symantec AntiVirus (latest version) for Workstations and Servers
Patch Management	Microsoft System Center Configuration Manager (SCCM) 2012 Windows Server Update Services (WSUS)
Mainframe Terminal Emulation	Blue Zone
Thin Client Access	*Citrix Xenapp 6.5 / Desktop 6.0*
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	Windows 7 / Windows 8	Windows 8
File System	NTFS	NTFS	NTFS
Maintenance	5 Year on-site, next business day	5 Year on-site, next business day	3 Years 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
Software Compatibility	Outlook Exchange (Downloadable) Date Book, Address Book, To do List, Memo Pad, Calculator
Connectivity	TCP/IP Internet or USB enabled

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 6.5*
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 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	VSM (Infra Enterprise) – ITIL Service Management

PLATFORM ARCHITECTURE: FILE/PRINT/WEB SERVERS:
SERVERS WILL BE VIRTUAL WHENEVER POSSIBLE.

Component	File/Print/Applications/Web (INTEL)	Database Server (INTEL)	Web Server/Application (UNIX)
Type	INTEL	INTEL	UNIX
Power	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident
Fault Tolerance / Disk Configuration	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident
CPU	Dual 3.0 MHz	Dual 3.0 MHz	Dual 1.5 GHz
Network Interface Cards	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T
Operating System	Windows 2008 R2 Server	Windows Server 2008 R2	Solaris (latest release)
Monitor	17" SVGA Color, if non-EOC site Not required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack mountable Flat LCD monitor Required if EOC resident
RAM	16 GB Minimum Cache 256 MB	16 GB Minimum Cache – Database/ Application specific	16 GB Minimum Cache – Database/Application specific
File System	NTFS	NTFS	Solaris
Third Party Software Requirements	Symantec Antivirus, Enterprise Edition MS SCCM Client	Symantec Antivirus, Enterprise Edition eTrust SiteMinder Agent MS SCCM Client	Symantec Endpoint Protection Enterprise Edition eTrust SiteMinder Agent
Web Server Software	N/A	Internet Information Server IIS7 Tomcat (if required by COTS package) BEA Systems WebLogic	Apache (if required by COTS package) Tomcat (if required by COTS package)
Platform	Dell	Dell	Sun
Maintenance	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included
Additional Hardware Requirements	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM & Tape Drive (DDS-4)
Pre-Install Options	None	None	None
Storage And Backup	Symantec NetBackup (i.e. snapshot)	Symantec NetBackup (i.e. snapshot)	Symantec NetBackup (i.e. snapshot)

PLATFORM ARCHITECTURE: DATABASE/APPLICATION SERVERS

Component	Mainframe Sun-setting	UNIX	INTEL	WEB	GIS
Database Software	N/A	Oracle 11g	SQL Server (latest release) Oracle 11g	N/A	Oracle 11g Oracle Spatial DB
Application Development Frameworks	N/A	Java 1.6 or newer	.NET Framework (latest release) Java 1.6 or newer	.NET Framework (latest release) Java 1.6 or newer	.NET Framework (latest release) ESR Pictometry
Virtualization	LPARS	Zones/Containers HPVM	VMWare	VMWare	Zones/Containers
Software And Development Tools (Report Writing Products Are Listed On Page 8.)	COBOL CICS TSO JCL	N/A	Microsoft Visual Studio – Latest Release Eclipse	Microsoft Visual Studio – Latest Release Eclipse	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 Microsoft Visual Studio – Latest Release
Version And Release Control	SCLM	Serena Version Manager	Serena Version Manager	Serena Version Manager	Serena Version Manager
LDAP / Directory / Authentication	RACF	Native operating system (Solaris, Linux, AIX)	Active Directory e-Trust SiteMinder	Active Directory e-Trust SiteMinder	Native Operating system
Data And Process Modeling	MS Visio Professional – Latest Release	MS Visio Professional– Latest Release	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release
Middleware (EAI)	webMethods Jacada	webMethods	webMethods MS BizTalk	webMethods Jacada MS BizTalk	N/A
Workstation Requirements	TCP/IP Connectivity	Oracle Client Suite ODBC Drivers	Oracle Client Suite ODBC Drivers SQL Management Studio	MS Internet Explorer – IE8 in IE7 mode	Terminal Server Client Citrix Metaframe Client Active X Plug-in Active Directory Tools

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	VSM (Infra Enterprise)
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

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 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	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.

Project Name and Number	Description
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.
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, email, fax, and incoming/outgoing postal mail. The project enables agencies to automate business processes and workflows, 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.

Project Name and Number	Description
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 caseload; 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.
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	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 recordkeeping.
Incident Reporting and Records Management Systems (FRD)	The FDR 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).

Project Name and Number	Description
2G70-026-000 Public Service Communications Replacement Project (IT0050)	
Public Service Communications Replacement Project	In FY 2007 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.
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.
Fairfax Inspections Database Online	This project eliminated the land used system redundancy in multiple agencies with cost minimization and government efficiency opportunities. Project goals also included streamlining the permitting process, reducing permit issuance, plan review and inspection timeframes, and acquiring a flexible technical architecture capable of embracing business process enhancements.
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.

Project Name and Number	Description
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.
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	Housing and Community Development's housing management system was complete in FY 2010. The project redesigned and consolidated multiple systems and databases. It eliminated manual data entry and streamlined HCD requirements for compliance with federal reporting requirements.

Project Name and Number	Description
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 manager 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 enable the court to manage court dockets in real time.
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	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 standard in order to provide court staff easy access to information contained in a database of residential placement information.

Project Name and Number	Description
IT0081 Housing Management Software Upgrade*	
Housing Management Software Upgrade	In FY 2009 this project Upgraded 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.
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 need, 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 have 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.
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.

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

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