Fairfax County, Virginia
Department of Information Technology

# FY 2011 Information Technology Plan

# Fairfax County Board of Supervisors

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# Fairfax County, Virginia Department of Information Technology

## FY 2011

# Information Technology Plan


Fairfax County
VIRGINIA

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Fairfax County
VIRGINIA

# Section 1

## IT GOVERNANCE

# IT GOVERNANCE

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# SECTION 1

## IT GOVERNANCE

### PLAN OVERVIEW

Like many governments faced with growth in demand for services while confronting a strained economy, the County is faced with major challenges and opportunities where technology innovation is essential. These challenges and opportunities are fueled by heightened expectations from the County's constituents and business community to interact and conduct business with the County utilizing modern automation and web-based capabilities that enhance communication in a variety of formats and enable further transparency in government. An environment of rapid change and the need for responsiveness together with finite resources highlights the importance of nimble IT enabled service.

The County's Information Technology (IT) capabilities must be contemporary, flexible, scalable, secure, and environmentally conscious with the ability to respond to new goals and dynamically changing service and operational requirements by various agencies. The County's IT environment builds on an enterprise architecture that includes industry standards, open systems, 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 solid products, and effective solution delivery at a fully leverage cost.

To enable Fairfax County's technology program to meet the challenges, continued emphasis is placed on determining solutions that provide enhanced on-line capabilities, promote cross agency business processes, enable data mining and sharing for more effective decision making, promote greater transparency by making information more publicly accessible, enable key County's priorities such as mobility and Telework, green initiatives, Public Safety, Land Development initiatives, enable self-service opportunities, ensure data privacy, and maintain low cost, supportable and secure infrastructure. The projects enable more effective communication, workflow and use of information within the County data and services. 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 funded in the Information Technology Fund-Fund 104 and Fund 120 (E-911). Sometimes projects included in the IT Plan are funded from other sources such as sponsor agency income funds or other monies to take advantage of total available County dollars, augment investment funding capacity, and provide additional opportunities to meet IT investment 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 001 and the Technology infrastructure Fund – Fund 505, and the routine operational activities, on-going support efforts, and normal upgrades and maintenance work supported by these funds is 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 2011 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.

Based on global changes in social and economic paradigm shifts, the following priorities have been validated and are adopted 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 direction and execution 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 support small scale agency business specific point solutions or industrial systems and matrix to DIT, and provide localized desk-side support. The County's Chief Technology Officer is the Director of the County's Department of Information Technology.

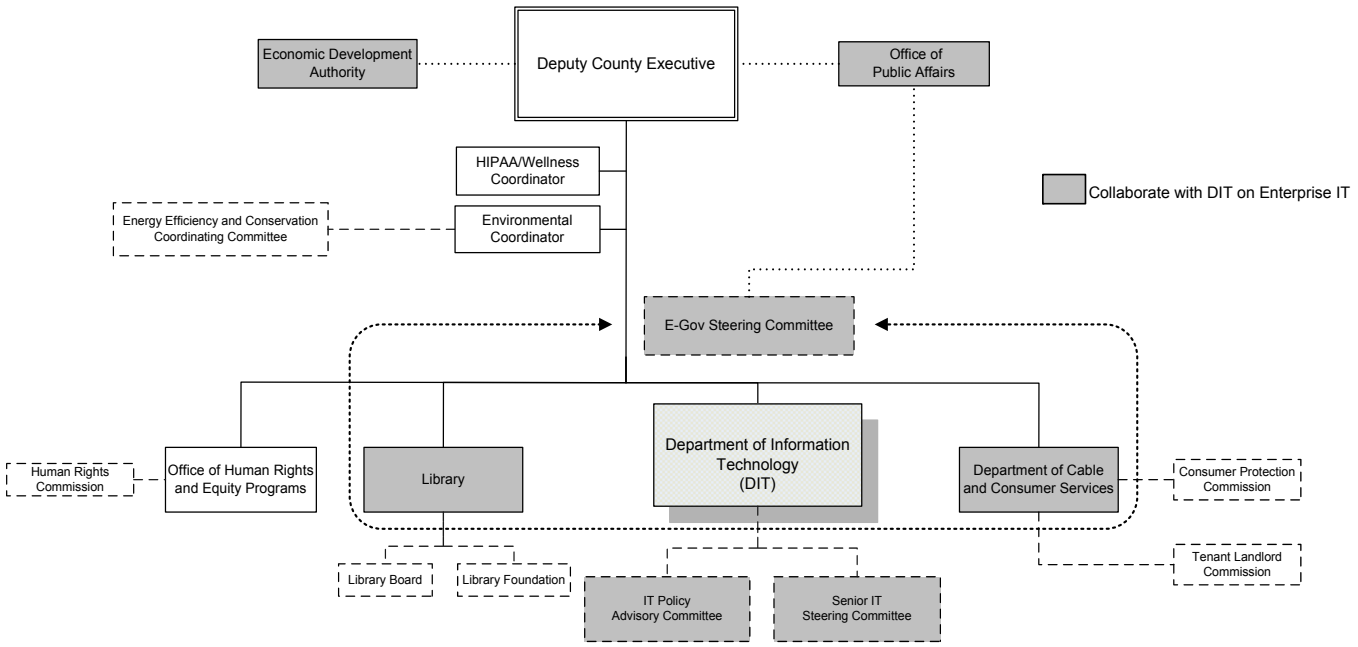
The Deputy County Executive for Information (DCE-I) related departments and staff functions is responsible for the overall direction of innovation and enterprise information policy. The DCE directs a broad range of information related agencies' functions, programs, and county-wide initiatives, leading efforts that integrate with or enhance the mission of delivering strategic technology initiatives. This model groups the County's information programs and services under a single authority to provide efficient and effective constituent services.

### Deputy County Executive Organization

Collaboration among the DCE-I departments which include Department of Information Technology (DIT), Fairfax County Library / Archives (FCPL), Department of Cable and Consumer Services (DCCS) and the Office of Public Affairs (OPA) deliver programs that contribute to the County's e-Government and public access channels and capabilities, enterprise technology architecture, document management, 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-I to develop a comprehensive communications message strategy and to ensure the integrity of content for published information served through the County's E-government programs.

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 Countywide 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.

Communications Productions provides award-winning broadcast productions 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 works with DIT in web-based video access.

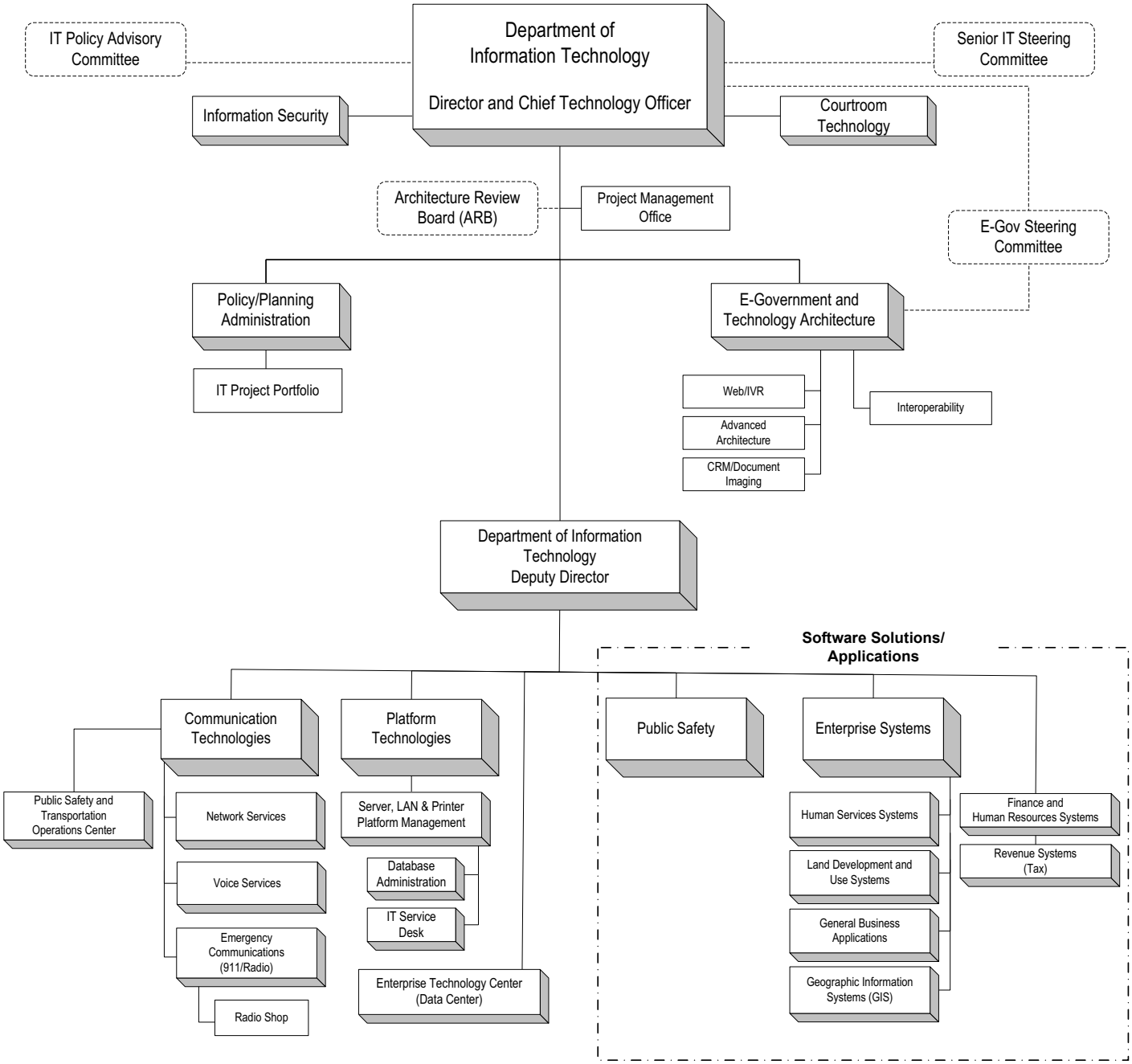
The mission of **Fairfax County Public Library system** is to provide and encourage the use of library resources and services to best meet the evolving educational, recreational, and informational needs of all the Fairfax County and Fairfax City residents. The Library's Technology Vision augments tradition 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-I's broad responsibility for information spans policy, information content strategy, energy and conservation, books, television, enterprise technology architecture, management of documents, and compliance. The DCE-I oversees the Health Insurance Portability Accountability Act (HIPAA) Compliance Office that 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-I is responsible for the Office of Human Rights and Equity Programs which assists with IT strategy in relation to compliance and related regulatory consultations. The DCE-I also serves as the liaison to the Economic Development Authority in conveying the County's best technology practices and assists with promoting Fairfax County to prospective businesses. IT strategy and support are also important in other DCE-I initiatives such as arts, special needs, and Energy Efficiency and Conservation.

## 1.1 Department of Information Technology Organization

### Fairfax County
### Department of Information Technology
### Organization Chart



The DCE-I 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 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. In the FY 2011 the County's Environmental Coordinator was transferred to the DCE-I group to assist with coordination and review of the county's environmental policies to ensure alignment of goals and objectives with the Board's environmental agenda.

**The Department of information Technology (DIT)** provides leadership, process governance, architecture resources and expertise in deploying modern information technologies to improve government efficiency. DIT designs, manages, and implements all aspects of information technology capabilities, programs, 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 was established with eight goals. The mission and goals statements were developed with considerable 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 performance while DIT's functions of developing and maintaining information technology systems, and providing secure, agile and sustainable technology infrastructure and customer service support County agencies. The Department of Information Technology is charged with establishing technology architecture, implementing and managing systems, applications, communications, and the overall management and security of the County's information assets.

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, distributed architectures, and wireless hand-held devices, as well as platforms that support enterprise class solutions and software applications. These information technology systems 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 end users and support staff.

DIT is organized into subject matter expert groups that support enterprise-wide systems including corporate applications, document management, CRM platform, and geographical information systems used by all agencies as well as agency business specific applications development and support. These include applications that support county agency specific business systems including revenue systems (Tax), corporate systems, human services agencies, land development, public works, and zoning, public safety/criminal justice, and general County agencies including the library, parks and facilities maintenance. DIT also provides a multi-channel E-Government program which provides architectural direction, standards and strategic innovation for on-line applications and technology programs including web, IVR, Social Media and systems and information interoperability architecture. A specialized Courtroom Technology group coordinates the implementation and support of modern courtroom technologies for Fairfax County Courts. In FY2005, the focus of the Public Safety group was expanded to new initiatives that integrate systems in public safety, addressing homeland security, and regional collaborative and interoperability initiatives and mandates. The Policy, Planning and Administration group provides DIT with administrative and IT policy support functions as well as compliance oversight, and IT technology portfolio/project management.

Technology Infrastructure divisions in DIT manages all 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 countywide 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 will result in greater county wide printing efficiency and cost reduction.

Finally 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.

## 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 and updated annually:

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 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 unfeasible. 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 extend. 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:

1999 Governor's Technology Award
First Governor's Technology Award – COVITS

2000 eGov Award for Outstanding Service Technology – MCOG
Innovations in America (Semi Finalist)
eGov Pioneer Award – Government Solution Center
Webmaster Honor Top 50 Internet/Intranet site.

2002 Governor's Technology Award
Achievement Award – 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 eGov 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 – VACO
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 IT Security Awareness
NaCO Award for IT Project Management Training Program

2009 NACO 2009 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 -the 2009 Digital Counties Survey selected Fairfax County as the fourth place winner in the 500,000 or more population

2010 Wanda Gibson was selected as one of the top 25 Doers, Dreamers and Drivers for 2010 by Government Technology Magazine
2010 Achievement Awards from the National Association of Counties – 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)

In promoting 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.

Both events have received county and national organization awards and recognition of 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

## 1.3 Senior Information Technology Steering Committee

In FY 1999 a County executive group, the Senior IT Steering Committee, was created to advise the DCE-I and Chief Technology Officer 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 entire IT project portfolio to continually assess whether the investments are providing expected benefits. This monitoring process provides a broad perspective from senior executives who independently and objectively evaluate and make decisions on the overall status, mission needs, and priorities for the County. The committee meets monthly to review on-going project status in relationship to the County's strategic business initiatives. Additionally, the committee reviews and provides budget recommendations for new initiatives.

Members of the Senior IT Steering Committee include:

- The County Executive
- Deputy County Executives
- The Director of the Department of Management and Budget
- The Director of the Department of information Technology/CTO
- Director of the Department of Purchasing and Supply Management

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
- Chief Technology Officer/Director of the Department of Information Technology
- Chief of Police
- Chief of Fire and Rescue Services
- Director of Public Safety Communications
- Director of Emergency Management

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 will need to be made to facilitate the goals of the initiative. The steering committee is designed to make decisions regarding changes in organizational policy and procedures that will be required to ensure project success. They will monitor work and achievement of project milestones, advise on broad policy decisions, support the cultural change necessary for the project, assist in conflict situations, and foster throughout the organizations an appreciation of the value of the integrated system.

The Steering Committee is chaired by a Deputy County Executive as Executive Sponsor and comprised of a Deputy County Executive and 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.

The FOCUS Steering Committee is representative of internal project governance structures established by Fairfax County to provide oversight and guidance for a major IT initiative.

## 1.8 Committees for other Active IT Initiatives

In carrying out its mission, the DCE-I, CTO, the Deputy County Executives, and/or DIT participate on several key County Committees focused on major County initiatives and/or operational oversight agendas, for example:

- The Public Safety IT Governance Board
- Emergency Management Coordinating Committee
- Emergency Management Executive Committee
- Public Safety and Transportation Operations Center (PSTOC) Leadership and Executive Committees
- Land Development Systems Steering Committee
- Court Technology Governance Board

## 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 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
- CIO Executive 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 expectation. As a strategic investment of County resources, technology facilitates the delivery of better and faster service at a reduced cost and enables the County to effectively respond to growing demand while avoiding certain associated costs. However, investments in technology can be significant, including capital and incorporation of technology into an organization's business complex. Without capital expenditures per se, capabilities can also be enabled through external services at a annual operational cost, such as with technology 'clouds' 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 and assets for optimal impact, and in a way that maximizes the benefits in a cost effective manner.

In 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 and, 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 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 capabilities and social media applications, Interactive Voice Response (IVR) platforms, mobile devices, Cable TV and content, the County's Public Access sites in Libraries and Access Fairfax sites (the highly successful CRiS Kiosk

channel was retired in FY 2010). 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 and transactions, 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 services needs. In FY 2011 the County will continue its efforts to add new services to the e-government channels, including new transactions, e-payments, enhanced search and integrated WEB 2.0 and 3.0 capabilities. The e-government 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.

In FY 2008 major e-government initiatives included new 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. Additionally, the County works with Homeland Security on regional interoperability initiatives to establish policies, procedures and protocol for data exchange in support of emergency planning and response. In FY 2009, a major redesign of the County's Web site was undertaken which updated the look and navigation of the 34,000 page site with new functionality, content enhancements, and innovative features. The new design included consistent left-side navigation for all pages in order to deliver user friendly access to county-wide services and information throughout the site. 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 implementation of the Google Search Appliance augmented the overall search functionality of the Web site. The Web site introduced a fresh color palette with a white background, along with text only, printer friendly and text resizing features to enhance accessibility, and advance the County's long standing e-government strategy of creating a government without walls, doors or clocks by providing a conduit to carry out on line business with the County 24/7. The new 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".**


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). The County's website has been one of several channels used for public input into the County's FY 2011 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 in addressing challenging fiscal constraints and projected revenue shortfalls for FY 2010 and FY 2011. The County solicited public input online, by telephone and at community dialogue sessions to help identify solutions for closing the budget gap. Additionally, there was an extensive outreach effort through the use of social media platforms such as Facebook, Twitter and YouTube. This program also received national recognition by Public Technology Incorporated.

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: (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 (www.fairfaxcounty.govgetfairfax), 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.

In FY 2011 efforts will focus on developing additional content for currently supported e-government channels and harnessing communication and web based e-community technologies in order to empower the public service of tomorrow. Developing policies and procedures for publishing County information, making services available through shared sites in the public domain to reach a broader audience, and delivering content and services through additional channels will remain strategic goals of the e-government program. Building new e-service transactions and e-payments, continued navigation improvements, improved content synchronization from disparate sources, addition of enhanced interactive features to the WEB site to expand and improve applications such as a Special Needs registry and supporting emergency response situations remain a strategic focus. In addition, 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 and accurate 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.


*Fairfax County Facebook*

## Customers Served

**IVR:** 4 million since FY 2005
**Web:** 34,000 pages - 52,445 visitors per day, more than 1,600,000 visits per month
**Unique visits** 7,757,364 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 | |

## 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 (FOCUS)

Fairfax County government and school system embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support finance (FAMIS), human resources (government: PRISM/ schools: LAWSON), budget (BPREP), procurement (CASPS) 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 provides an opportunity to transform and streamline administrative operations, enhance use of information for reporting and analysis, reduce agencies' 'shadow' systems and overlapping processes, and lower related costs. This major initiative also mitigates the risk that current legacy antiquated and disjointed systems pose for system failure, inferior data, and operational integrity. The project is known as FOCUS (Fairfax County Unified System).

The current 'stovepipe' legacy business systems are on various, older generation technology platforms using a variety of hardware and software architectures integrated through a number of interfaces and reporting tools. Previous assessments of these aging systems revealed that they are long past their projected useful lifecycle, do not meet the demands of human resource and financial management processing, provide extremely limited employee self service capabilities, cannot support data analytics needs for decision-making, do not integrate well with the County's e-government strategy, transparency goals, Telework objectives, or COOP (Continuity of Operations Planning). Their technological obsolescence of the legacy systems results in on-going sustainability that is at great risk with high cost. System limitations continue to drive a proliferation of multi-step tasks to produce desired data and the development of numerous 'workaround' systems to gain necessary functionality currently not available. This has also resulted in an exponentially increased risk for security vulnerabilities. Several of the current systems were developed over twenty-three years ago in programming languages that are outdated and not practiced by the vast majority of the industry labor pool. As such, these systems have no vendor support and rely on retirement eligible in-house staff for maintenance. Further these systems cannot be integrated with future mandated requirements and are a hindrance 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 for the acquisition and implementation an integrated financial/procurement/human resources/ budget solution that will support agencies in the delivery of government and school services and activities, take advantage of best practices, provide the opportunity for multi-faceted data-driven decisions, significantly improve the efficiency and effectiveness of existing processes, enhance e-government initiatives and promote telework opportunities, and aid in the transformation and standardization of financial and human resource processes.

The FOCUS project will foster an environment of change and redesign to allow for more efficient and effective processes while seeking to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution. With the migration to a more standard, supportable database and development environment that incorporates workflow and Web technology, the project expects to:

- Create a contemporary enterprise scale single solution platform that reduces total cost of system management and data center operations;
- Enable a flexible environment where access to data and information is achievable, even from remote locations;
- Provide seamless integration and interoperability of the new system with other existing applications;
- Reduce the number of shadow systems currently used in the County and Schools that augment legacy system data and the associated reconciliation processes between systems;
- Align the reporting strategy with the County and School system's overall data management and data warehousing strategy. Increase intuitive reporting, better data definition, and analytics as well as data stewardship, integrity, and security. Enable and support performance reporting and consistent information management throughout the organizations. Improve the quality and accessibility of information for decision support;

- Facilitate modern and fully integrated best business practices that will empower agencies and employees to improve their productivity;
- Enhance and improve functionality in back-office functional areas;
- Reduce redundant data entry, storage, and paper processing; and
- Facilitate employee self service, agency workforce planning, and integration with WEB for enhanced public search, inquiry and engagement.

The County's approach for acquisition was to separate the solicitation for the software product suite from the system implementer services. Selection committee members of the key stakeholder agencies for both County and Schools and staff participated in in-depth analysis of top tier software products resulting in the purchase of SAP software in mid-2009. Upon award of the software solution, a separate solicitation for system implementer services was competitively advertised in mid-2009 for firms with deep technical SAP software product expertise, well defined project approach and risk experience for scope, and strong experience in local government and schools K-12 related business areas. Contract award is anticipated in mid-2010. Both these processes included over one hundred subject matter experts and technical staffs in both county and schools organizations.

The project begins implementation activities in summer, 2010, with a joint county/schools project team co-located and working jointly through all phases, blueprinting through realization activities, to include change management and training activities.

## 2.3 Geographic Information Systems (GIS)

GIS is a strategic foundational technology integrated with numerous county applications and business processes, with over 750 map layers and data applications, and integrated as a capability in the e-Gov program. A significant achievement for GIS in FY 2010 was its successful participation in providing GIS maps that constitute a core part of Fairfax County's new CAD/911 system that went live in October 2009. The CAD/911 software runs on mobile display terminals in over 1,400 public safety vehicles and dozens of workstations in the McConnell PSTOC 911 center (figure 1). Over the past three years substantial effort went into coordination with public safety agencies to develop the necessary GIS data for the system. Maintenance and enhancement of the GIS data will continue to be a significant effort to capture ongoing changes to the county's road system and make adjustments as the system is enhanced, requirements evolve, and new versions come on line.

The Master Address Repository (MAR) project proved invaluable for the new CAD/911 system. The MAR is the authoritative source of parcel (situs) addresses in the County essential for effective operation of the new CAD/911 system. In order to more effectively manage address related data in the CAD, changes were made to the MAR data model and maintenance program. The joint project with the County's Department of Public Safety and Communication (responsible for the CAD/911 system)

*Figure 1. The CAD Dispatcher's Display*

to check the MAR addresses against Post Office data and also to cross check against telephone companies' Master Street Address Guide (MSAG) is underway with a projected completion date of summer 2010. In order to support the needs for regional GIS data (road centerlines) for the new CAD/911 system, Fairfax County partnered with neighboring jurisdictions to develop an approach and data model that will enable regional sharing of road centerline information for use in public safety

Additionally, GIS prepared for the 2010 Census by working with the County Demographer to provide the Census Bureau a validated list of all the residential addresses in the county. The project was praised for its quality as being one of the most complete and accurate data received in the regional Census Bureau office. The Master Address Repository was critical in ensuring both the speed and accuracy of the process. The next round of work involves detailed planning for the reapportionment process that initiates immediately after receipt of the CY 2010 census data in early CY 2011. This work will involve collaborating with the County demographer, electoral staff, and the County Attorney and identifying appropriate GIS tools to assist in the reapportionment process.

The Virtual Fairfax application which was also rolled out in FY 2010 provides the public and county staff a new web tool that displays buildings in key areas of the county (over 3 sq. miles in Tysons Corner and over 5 sq. miles in Reston/Herndon) as well as the terrain in 3-D (figure 2). It also unifies access to different land information systems (LDSNET, ICARE, and My Neighborhood), and provides easy linkage to information for schools, historic sites and places of interest.


*Figure 2. The Herndon-Reston Area in the Virtual Fairfax Application*

Additionally, a new version of the Geographic Exploration and Mapping (GEM) Web application was released in FY 2010 which provides extensive information reporting to county staff along with simplified viewing of the oblique imagery and orthophotography.

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 3.3 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 of that imagery will be available to users. Additionally, more imagery and historic map images 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 over 30,000 pre-made maps and images of historic maps available online.

In FY 2011 the GIS branch will continue to enhance the existing applications and GIS data, with particular attention to centerline data. The County will have an ongoing partnership with neighboring jurisdictions and the state to develop locally maintained, regionally routable centerline data sets valuable for emergency response across jurisdictional lines. The number of enhancements/ updates to some datasets within the GIS database have continued to increase in frequency, while others have held steady (as in the case of parcels) or declined reflecting the decrease in development as a result of the downturn in the local economy (Table 1). Also planned for FY 2011 is the release of an enhanced My Neighborhood version 2.0 with additional features, more intuitive design, and utilizing up to date web mapping technology.

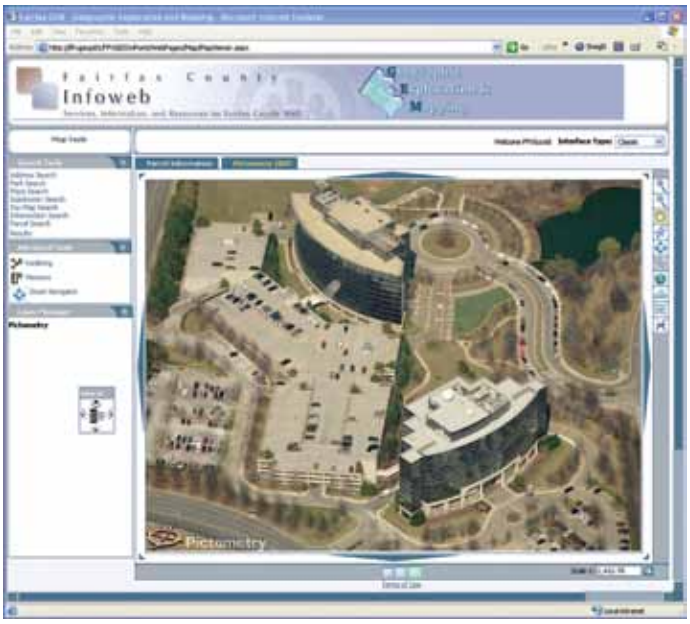
| Data Layers | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 |
|---|---|---|---|---|---|---|
| Parcels | 341,000 | 343,500 | 356,000 | 357,300 | 358,300 | 358,000* |
| Addresses | 360,000 | 365,000 | 368,000 | 364,700 | 365,100 | 365,100 |
| Building Outlines | 248,000 | 252,000 | 257,000 | 257,277 | 257,300 | 257,300 |
| Miles of Roads | 4,000 | 4,800 | 4,700 | 4,718 | 4,736 | 4,760 |
| Number of streetlights | | | 57,939 | 58,935 | 59,937 | 60,114 |
| Linear miles of sanitary sewer lines | | | 3,350 | 3,373 | 3,390 | 3,401 |

***Table 1 - Some of the significant layers in the GIS database. *The decrease in the number of parcels is due to the conversion of condominiums (counted as parcels) to apartments (which are not parcels – but are considered part of the overall building property.)***

The planimetric data update project delivered new data for the SE quadrant of the county based on the 2007 state imagery, dramatically improving the quantity and quality of existing planimetric data acquired from stereo imagery in 1997. In FY 2010 work began on updating the NE quadrant of the county. This was a jointly funded project between DPWES and DIT, with the intent of updating 25% of the County annually, which would ensure that the planimetric data will be no more than 4-5 years old. However due to budget constraints, this update activity may slow as it gets to the third and fourth quadrants. This data has been requested by Fairfax County's Environmental Quality Advisory Council (EQAC) and a number of County agencies. The updated planimertic data is also a foundational component of the new Computer Aided Dispatch system's maps, as well as every county web application that includes mapping ability.

In cooperation with the state's Virginia Base Mapping Program, aerial imagery of the entire County was updated in FY 2009 (previously in 2007 and 2002) and delivered to the County in mid FY 2010. It took additional time to perform the accuracy evaluations necessary to use it in future planimetric update since this was the first digital capture of aerial imagery by the state and the first that the county has experienced. New oblique imagery was flown in FY 2009 and delivered at the end of the fiscal year. Oblique Imagery shows the sides of buildings, which enables County Assessors to more efficiently view and determine property values. The views also provide public safety officials with key information such as window and door locations, and the ability to determine their dimensions and heights above the ground, which aids in planning emergency response. The oblique imagery has also been useful to CAD/911 call takers and dispatchers who now more accurately identify incident locations and response conditions.

The availability of key County data digitally through the GIS provides a range of benefits to constituents as well as County staff. Digital orthoimagery is widely used within GIS as well as over the web. With the parcel and zoning data now maintained digitally, production of the County's parcel and zoning books has been greatly accelerated. Time consuming manual steps were replaced with a digital production process enabling staff to capture additional features in the GIS (e.g., more easements, particularly conservation easements). All map changes are posted to the internet daily, providing web users of the Digital Map Viewer with the latest versions of the maps. Prior to these enhancements maps were printed for distribution annually. Digital production has enabled the use of




color maps, and development of new symbolization of zoning patterns are added features. The popularity of the frequently updated data is evident by the steady increase in usage of the Digital Map Viewer and reduced demand for the printed books.

In addition to the GIS branch itself, over 25 County agencies use GIS to 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.

- **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 Solid Waster 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 stormwater infrastructure to identify areas where there was 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 stormwater facilities.

- **DPWES Waste Water Management** – The Department of Public Works digitized the sanitary sewer lines into the GIS and maintains them regularly. Storm sewers digitization was completed and is now in the GIS data warehouse. The data is also available in the My Neighborhood application. 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.

- **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 Health Department** used GIS to conduct emergency preparedness planning, track unhealthful soil deposits, track well and septic systems and notify citizens when necessary. Drinking water wells have also been identified and entered into the GIS. More recently GIS was used to assist in response to the H1N1 flu pandemic in finding and mapping vaccine distribution locations.

- **The Park Authority** uses GIS for a wide range of planning and management activities. It uses GIS to indentify candidate properties for purchase by the county to improve park resources. Recently it used GIS to assist in evaluating the parklands and schools as part of the Reston Master Plan.

- **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 a new 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 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.

- **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. In addition, 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 to Fairfax employers and their staff. GIS is used to plan and analyze bus stop locations and pedestrian safety improvements. They also use GIS to help plan pedestrian safety projects and analyses.

- **Pest and Disease Management** – In health areas, GIS has been used as part of the West Nile Virus planning and response, as well as tracking tuberculosis in the County. Previously GIS had proven its value in the canker worm outbreak in FY 2001 (and before that the Gypsy Moth outbreak). GIS enabled County staff to quickly identify residents who could be affected by planned canker worm spraying and contacted

them ahead of time. The GIS also provided spraying coordinates to the helicopter spray crews so that balloons would not have to be used, which was a significant time and cost savings.

- **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. In addition, the GIS Branch completed development of the My Neighborhood 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.

- **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 and area.

- **Office of Community Revitalization and Reinvestment** launched its new 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.

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:

- 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.

- County GIS programs received the VA Governor's Technology 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.

- 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 most recent accomplishment is acquiring support from the State's Wireless Board through the Virginia Geographic Information Network to build on the past centerline work and develop a regional, routable centerline data set. This work laid the foundation for a state wide routable centerline model. It will enable routing of public safety vehicles across jurisdiction boundaries. The GIS Branch 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 GIS Branch in DIT continues its strategic interaction with County agencies to foster development of GIS capabilities and integration into their business processes.

The preceding years have seen GIS take root in most County agencies. The program will continue to expand and is an important tool or Public Safety, Homeland Security and Emergency Management. The County is a member of NACo's GIS committee which looks at key GIS issues affecting counties; and the County's GIS manager is a member of the Council of Government's CIO's GIS Committee, working on regional interoperability initiatives and pursuing projects and funding to enhance regional GIS. Each year, GIS hosts "GIS Day" which promotes the use of GIS and development of new GIS applications through county-wide 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 uses Internet Quorum (IQ), and Siebel technologies to enhance tracking and response to citizen inquiries. 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, and via the internet.

Successful implementation in 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, and subsequent phases provided expanded capability throughout the County. The web enabled IQ system replaced several custom applications and provided the expansion of IQ to the Office of Public Affairs, Consumer Protection, Human Rights Office, 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, as well a live 311 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 software within the County's infrastructure environment. Initial efforts involved development of the overall framework and pilot application in the Office of Public Affairs which was successfully implemented in FY 2008. CRM application was also deployed to support 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 (OPPP) is the clearinghouse for partnership information in Fairfax County. CRM efforts in OPPP 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. Additionally, the CRM solution was implemented in the Lee and Dranesville District Board of Supervisor offices in October 2008. 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. The goal in FY 2011 will be to provide continued support for agencies and enable screen pop interaction with case record information, contact interaction records and profiles, and transparent case escalation.

## 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. IDM 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; despite e-government efforts and often in response to legal mandates many government processes remain paper-intensive and require agencies to store large volumes of paper for extended periods of time. Consequently, many County agencies implement technical solutions 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, 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 form 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 2011 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, the Juvenile and Domestic Relations District Court, the Clerk to the Board, and the Department of Finance. 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 will also be integrated with the County's FOCUS (ERP) project, where images of hard copy documentation may need to be embedded in an electronic profile or case record, such as those involved in Human Resource Management processes.

## 2.6 Technology Infrastructure Initiatives

To ensure continuous delivery of quality constituent 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. 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.

### Virtualization and Consolidation

Virtualization and Cloud Computing technologies serve as the fundamental foundation for this strategic direction. In FY07-FY08 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 County-wide "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 FY08-FY09 Fairfax County continued the move toward virtualization/consolidation of infrastructure architecture by implementing storage virtualization (SAN, NAS, Grid storage), application virtualization (Terminal Services, Citrix), client virtualization (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.

### 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 make the private cloud functional. Besides 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 will be able to have internal and external components that provide different services based on costs, capabilities, needs, and SLAs. This will be aligned with the requirements of the business and deliver value by enabling improved and incremental products and services.

In FY 2011 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). 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.

### 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 for Fairfax County 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 took 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. The transformation of Fairfax County's voice platform is a significant endeavor that entails a great deal of planning and careful implementation over many months. Voice over IP (VoIP) is clearly the strategic technology that the County embraces. Integration of the voice and office productivity platforms, often referred to as Unified Communications, has been implemented as a pilot in selected County facilities. 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.

The County is also embarking on a strategy that enhances its wireless broadband capabilities designed for integration with the County's robust, secure fiber infrastructure. This initiative will leverage the county's voice wireless (radio) program, network and telecommunications programs for a unified architecture and support scenario. The strategy, while designed to leverage federal broadband grant opportunities, will provide improved services and provide better cost efficiency for annual operations cost for similar commercially provided bandwidth.

## 2.7 Inspections, Code Enforcement and Land Development Accessibility Initiatives

### Fairfax Inspection Database Online (FIDO)

The Fairfax Inspections Database Online (FIDO) is a strategic initiative to enhance and consolidate permit and inspection services provided by multiple County agencies into a single software solution that includes e-permitting capabilities for customers. The system has enabled the Department of Public Works and Environmental Services (DPWES), the Department of Planning and Zoning (DPZ), the Health Department (HD), the Code Enforcement Strike Team, and the Fire and Rescue Department (FRD) to collaboratively provide permit issuance, inspection, and code enforcement services to Fairfax County citizens and business partners.

Goals for this project included migrating from the legacy mainframe ISIS system to a technical solution that promotes business process homogeneity in a multi-agency environment, and facilitates 24/7 internet access to land use services (for citizens and business partners) via the Internet. In addition to the replacement of the legacy ISIS mainframe system, FIDO also replaced several agency-specific permit, code enforcement, license, and cashiering with an enterprise solution that provides accessible business intelligence with resultant land use service delivery enhancements, and diminishing redundant technical infrastructure expenditures.

Additionally FIDO also eliminated several manual permit issuance pre-requisites (i.e. Site Plan approval, contractor license validation, code enforcement investigations) with automated interfaces to multiple state and county systems (State Contractor database, Master Address Repository, Plans & Waivers System, Integrated Assessment System) that consolidate prerequisites in custom developed FIDO look-up screens. FIDO's Web portal and Integrated Voice Response (IVR) module also provide citizens and business partners FIDO on line access to:

- reports of alleged land use code violations of properties in their neighborhoods,

- the status of the County investigations of alleged problem properties in their neighborhood,
- scheduling inspections for approved permits, and
- the status of building permit applications

During FY 2010 Code enforcement Inspectors from FRD, DPZ and the Health Department received wireless-laptop access to FIDO in order to streamline field-based alleged problem property assessment and code enforcement violation activities. FIDO wireless access from the field has reduced the need for multiple trips back to the office to update FIDO with inspection results, and provides a "virtual mobile office" for mobile workers to work collaboratively with senior management to resolve "quality of life" neighborhood issues.

In FY 2011 all FIDO modules (Permits, Code Enforcement, License, Customer Service, and Cashiering) are in production for DPWES, DPZ, FRD, the HD, and Code Enforcement Team). Other agencies such as the Department of Housing and Community Development, and the County Attorney also access FIDO on an as needed basis.

## Department of Code Compliance – FY 2011

In 2007, FIDO provided enhanced code compliance technologies to the County's Code Enforcement Strike Team to facilitate the rapid deployment of cross-agency investigative teams focused on neighborhood quality of life issues such as overcrowding, multi-vehicle storage, hoarding, and alleged fire code violations. By 2010 these technologies included web based data repositories of address-specific code enforcement data, and field-based wireless access to FIDO for inspectors involved in investigative data collection and analysis activities. Based on the success of these activities, existing FIDO business functionality will be leveraged to support the newly established (FY 2011) Fairfax County Department of Code Compliance. The new agency will utilize the web, wireless, and land use data consolidation features of FIDO to provide enhanced data sharing and inquiry capabilities for agency personnel, with associated web capabilities for citizens to track the status of code enforcement investigations in their neighborhoods

## Land Information Accessibility

In January 2006 the Board of Supervisors established the Fairfax County Land Use Information Accessibility Advisory Group ("Advisory Group"). The purpose was to review how land planning and development information is currently made available to the public, and to make recommendations for information accessibility improvements. The target stakeholder audience included County staff, citizens, the land development industry, property owners, and others with an interest in knowing more about proposed and ongoing land planning and development activities. Details concerning the Advisory Group's final report and recommendations are available @ http://www.fairfaxcounty.gov/landusecomm/

During the past four years, DIT has taken an incremental approach to address the Group's recommendations due to on-going budget constraints and funding challenges. This approach has included the following deliverables:

- New web page design to reorganize and consolidate the land planning and development information (http://www.fairfaxcounty.gov/living/landuse/),
- New ability to search the Land Development System using a County address to see all nearby land planning and development cases (on a map or by listing, with drill down capability; http://fairfaxcounty.gov/ldsnet/),
- New ability to search the Land Development System by Magisterial District to see all nearby land planning and development cases (on a map with drill down capability; http://www.fairfaxcounty.gov/ldsnet/),

- Adding Building Permit data to the LDSNET web portal to provide Search by Address\Search by Magisterial building permit options,
- Providing web page accessible land planning and development case summaries in PDF download formats,
- Enhancing the LDSNET and My Neighborhood web page integration to streamline end user navigation.

During FY 2010, work continued with a pilot application that integrated web-based GIS 3-D imagery and GIS capabilities with existing land use systems such as IAS (tax assessment), LDS (Commercial and Residential development plans), and FIDO (building permit issuance). The pilot application has thousands of 3-D buildings in the Tyson's and Reston/Herndon areas. With a single mouse click 3-D aerial tours of the County – business centers, historic sites, schools, parks – along with easy address-based searches/queries of construction sites and building permit issuance activities is now possible. Users can also view their own 3-D models within the application and conduct shadow analyses of 3-D objects. The pilot application (Virtual Fairfax) is in a testing phase and will be released to the general public during FY 2011. On-going efforts to address the Advisory Group's recommendations to meet government transparency objectives will continue in FY 2011 (subject to funding priorities) with the following initiatives:

- Continued updating of existing 3-D buildings, as well as the addition of more buildings, and enhancement of features to increase the usefulness of the Virtual Fairfax application for land user reference,
- The Implementation of web-based building permits application capabilities for County business partners and citizens.
- On-going maintenance enhancements to FIDO, LDSNET and companion systems to ensure data integrity, security and portability,
- Data warehouse capability analyses to identify cost effective technologies that will streamline and enhance citizen access to land use development, permit issuance, and code enforcement data.

## 2.8 Public Safety Architecture Modernization

The goal of the Public Safety Architecture Modernization Project is to implement an integrated software solution suite to support Computer Aided Dispatch (CAD) and Records/Information Management Systems (RMS) for Fairfax County's Public Safety agencies. This project provides the County's public safety first responders with ready access to the tools that enable sharing of tactical information, often in real time and on-site, with a number of different entities such as emergency management agencies; neighboring Public Safety Access Points (PSAP) and Police and Fire departments; as well as state and federal authorities including Department of Defense components. These requirements are particularly critical for the County and other jurisdictions in the National Capital Region and are consistent with NIMS guidelines. There are numerous technical and functional improvements the new system offers the County including:

- Integrated CAD/Records Management System for Public Safety agencies
- Automatic Vehicle Location (AVL) – This is vital feature to insure personnel safety, as well as operational capabilities such as nearest unit response and appropriate resource utilization.
- Nearest Unit Response – Efficient routing based on quality mapping data, in combination with AVL will provide the fastest response to the scene and insure that the closest, most appropriate unit is provided with the optimal routing.
- Standards-Based GIS Capability that will integrate with and leverage existing County's GIS data layer and mapping resources.
- Standards-based interoperability to support both internal County data and information sharing across public safety and related agencies, as well as critical external data and information sharing such as CAD to CAD, interoperability with Virginia Department of Transportation as well as Virginia State Police will provide collaborative incident response with neighboring jurisdictions supporting mutual response.
- Up-to-date tools that improve system administration, enabling the County to better manage and own its application and increasing the ability for Public Safety to respond quickly and effectively to changing needs, and reducing reliance on third-party support and overall system maintenance costs.

- A non-proprietary, standards based system architecture built on a standard platform that reduces the frequency of costly and invasive forklift replacements based on hardware obsolesce. This improves the County's posture for planning refresh cycles, warranties and maintenance plans.

In May 2008 a new Emergency Patient Care Reporting system (EPCR) was the first application to be implemented as part of this project. In November 2009 implementation of a new CAD (Computer-Aided Dispatch 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 work will be focused on completing planned product enhancements and post implementation tasks.

### Interoperability – Northern Virginia CAD 2 CAD Exchange

Funded through Federal Homeland Security grants, the CAD2CAD Exchange is a strategic regional project enabling the sharing of non-sensitive, fire Computer Aided Dispatch (CAD) data between the operational CAD systems of the City of Alexandria, Arlington County, and Fairfax County. With implementation of the CAD2CAD these jurisdictions can view real-time status of fire units and request resources from one another in mutual aid responses which currently occurs over 40 times per day.

The exchange is supported by the Data Exchange Hub, a component of the Nation Capital Region's Interoperable Communications Infrastructure. This real-time data interface supporting 24 x 7 mission-critical emergency functions has improved mutual aid coordination, information and situational awareness, reduced dispatch times, and improved incident response times and service to the community. The Unit Status and Request for Resource Services implemented on Feb. 18th 2010, have significantly reduced the time needed to select and dispatch resources to incidents requiring Mutual Aid. Monthly statistics from before and after the CAD2CAD implementation reflect an almost 50 % reduction in the Turn Out time of Units Responding to Mutual Aid calls. That is a direct, measurable and tangible return on investment for grant funds applied to date toward this effort.

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, and is a milestone for interoperabiltiy standards and methodology that can be expanded in public safety, and be applied to other internal multi-agency or inter-governmental application and colloboration opportunities.

# Section 3

## INFORMATION TECHNOLOGY PROGRAMS

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## FEATURED IN THIS SECTION

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# SECTION 3

## 3.1 INFORMATION TECHNOLOGY PROGRAMS

### Technology Overview

### Purpose

Fund 104, Information Technology, was established in FY1995 to strengthen centralized management of available resources by consolidating major Information Technology (IT) projects in one fund. Based on the 1994 Information Technology (ITAG) study, this fund was created to account for spending by project and is managed centrally by the Department of Information Technology. Historically, the E-911 Emergency Telephone Service Fee, a General Fund transfer, the State Technology Trust Fund, and interest earnings are sources for investment in Information Technology projects. However, in FY 2001, the E-911 Emergency Telephone Service Fee revenue and related project expenses were moved to 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 several key elements: provide an adequate technology infrastructure for agencies in making quality operational improvements; redesign existing business processes with technology to achieve large-scale improvements in service quality and achieve administrative efficiencies; and promote the use of technology in enabling government services without "doors, walls or clocks". The County's long-term commitment to provide quality customer service through the effective use of technology is manifested in service enhancements, improved access to services electronically, expedited response to citizen inquiries, improved operational efficiencies, better information for management decisions, and increased performance capabilities.

### FY 2011 Initiatives

In FY 2011, funding of $5.5 million, which includes a General Fund transfer of $3.2 million, Cable Communications Fund transfer of $1.8 million, and interest income of $0.5 million, is provided to meet contractual obligations and complete planned phases of existing IT projects in Fund 104. These projects continue to meet one or multiple priorities established by the Senior Information Technology Steering Committee and include a mix of projects that provide benefits for both citizens and employees and that adequately balance continuing initiatives with the need for maintaining and strengthening the County's technology infrastructure. Funded projects will support initiatives in general county services and sustain enterprise technology foundation systems 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.

In accordance with the FY 2011 Budget Guidelines funding requests for Fund 104 IT projects were limited to mandates and existing IT projects requiring a planned funding increment to meet contractual obligations and/or to complete a planned phase. During the annual Fund 104 submission process, agencies were advised that in response to significant budget constraints FY 2011 Fund 104 Funding requests must represent the planned budget increment supporting a previously approved phase required to continue the project deliverables. While funding for IT projects is very limited in FY 2010 and FY 2011, it is anticipated that expenditure requirements will increase in future years due to several large systems approaching the end of their useful life.

In keeping with established procedures, a Project Review Team consisting of business and technical staff from the Department of Information Technology (DIT) and the Department of Management and Budget (DMB) evaluated all submissions requesting additional funding for clear alignment with project plans and anticipated deliverables. Evaluations considered continued alignment with project plans from both a business and a technical perspective, including whether the continued implementation of the project would realize proposed benefits. Benefits of the project were weighed against the cost and several risk factors, including potential unknowns related to expenses, changes in scope necessitated by new business drivers, technological relevance, operational transformation needs, project schedule viability, and the impact of not funding or otherwise delaying the project. Technical factors examined include alignment with County technology architecture and standards, impact on existing County IT infrastructure, and availability of viable products and services. Also considered were factors such as organizational experience with the solutions that support

the project business goals, and the availability of human resources both in DIT and the sponsoring agency to implement the project.

## Funding Priorities

The Senior IT Steering Committee establishes the funding priorities for technology projects. Beginning in FY 2004, based on global changes in social and economic paradigm shifts, the new priorities shown below were adopted. The recommended IT investments meet the five key investment policy objectives shown below and are supported by the Senior IT Steering committee and the Information Technology Policy Advisory Committee (ITPAC). A more detailed explanation of the projects within these requirements is provided within:

- **Mandated Requirements:** enacted by the Federal Government, Commonwealth of Virgin, Board of Supervisors, Court ordered or County regulation changes.
- **Completion of Prior Investments:** multi-year lease purchase, implements phase or completion of planned project.
- **Enhanced County Security:** homeland security, physical security, and information security and privacy.
- **Improved Service and Efficiency:** consolidate 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 and e-government.
- **Maintaining a Current and Supportable Technology Infrastructure:** consistent and reliable hardware, software and communications infrastructure; ensure that citizens, businesses and County employees have appropriate access to information and services.

The five investment policy objectives relate to the County's continuing focus on making access to government services more reliable, secure, and efficient. The projects on the following pages are supported and will receive additional funding in FY 2011. The established priorities for IT projects for FY 2011 are summarized as follows:

| PRIORITY | FY 2011 ADOPTED FUNDING |
|---|---|
| Completion of Prior Investments | $1.4 million |
| Enhanced County Security | $1.0 million |
| Maintaining a Current and Supportable Technology Infrastructure | $3.1 million |
| **TOTAL** | **$5.5 million** |

## Completion of Prior Investments – $1.4 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.

In FY 2011 funding of $665,550 is included to support the Computer Integrated Facilities Management (CIFM) system for the Facilities Management Department and Park Authority. The two agencies hold the greatest portion of responsibility for the maintenance of the County's largest and most valuable physical assets: its properties, facilities, and the subsystems that keep them operational. FY 2011 funding will support completion of the CIFM project and the deployment of the remaining mobile devices to allow field access to asset data, inventories, operational information as well as improved data collection and inventory tracking. The investment support efficiencies within agencies, by streamlining time-intensive paper-intensive processes associated with generating and documenting reports, while reducing the amount of travel required between offices, stations, and the field.

Funding of $350,000 is included in FY 2011 to support the continued implementation of an electronic summons solution for traffic tickets in Fairfax County. The 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 aims to eliminate manual data entry, ensure data integrity, provide accurate code section violations to officers in the field, facilitate faster and safer ticketing process for officers and enhance public access to traffic ticket and case information.

Funding of $300,000 is included to continue Fairfax County's investment in e-Government. The County continues to use public access technologies to support the expanding demand for on line e-services and information associated with the County's growth and diversity. A comprehensive approach is employed to ensure an efficient infrastructure capable of supporting multiple business solutions. FY 2011 plans include the development of collaborative functionalities for County agencies including implementation of a new FairfaxNet SharePoint portal to provide a centralized resource for County content, forms, policies, news, applications, and training.

FY 2011 funding of $75,000 in the Courts electronic wayfinding project is required to complete installation of wayfinding to Juvenile and Domestic Relations District Court (JDRDC) courtrooms and the Courthouse information desk.

## Enhanced County Security – $1.0 million

Ensuring the security of the County's IT investments and information assets is of primary importance to the Department of Information Technology. Through many projects and initiatives, efforts are focused on the security of various levels of County data, from e-mail to homeland security measures. During FY 2011, the County will continue to implement a multi-faceted approach to securing County data and assets.

Funding of $862,882 is recommended in FY 2011 to support final implementation of the integrated Public Safety Computer Aided Dispatch/Records Management System (CAD/RMS) as part of the Public Safety Architecture Modernization initiative. The funding supports final implementation and integration of modules, as well as wireless support to ensure a unified technology platform across public safety agencies.

FY 2011 funding of $100,000 is included to create a data warehouse to enable effective management information reporting from various disparate Department of Family Services (DFS) systems. This project will enhance security and efficiency within DFS by providing standardized, consistent, clean and integrated data sourced from 30 distinct department wide IT systems. The data will be structured to address the reporting and analytical needs of each division and the department, and will provide a systematic way to retrieve and analyze data in order to enhance overall service delivery.

Funding of $75,000 is recommended to design and develop a secure, scalable and easy to use Community Services Board (CSB) HIPAA data repository to store current and future HIPAA related information. The 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.

## Maintain a Current and Supportable Technology Infrastructure – $3.1 million

In an ever changing technical environment, maintaining a current and supportable technology environment is a challenge that must be continually addressed to ensure performance, operability, security and integrity. 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 2011 support the goal of continuing to update and strengthen the technology foundation where practical, and ensure that residents, the business community and County staff have appropriate and reliable access to information and services.

Funding of $1,742,000 in FY 2011 supports the continued implementation of the multi-year Telecommunication Modernization Project designed to replace disparate telephone systems throughout the County with a contemporary telecommunication platform that includes functionality to integrate voice with data capabilities such as e-mail, other messaging systems, streamline business processes, consolidate use of telecommunications facilities, enhance system operational efficiency, and reduce overall support costs. An additional core benefit will be the use of distributed telecommunications applications across the enterprise fiber network (I-Net). The new voice communications platform also provides secure communications to support the needs of Telework. This project provides the telecommunications infrastructure to serves the communications needs of County agencies and advances service delivery to citizens, while maintaining flexibility to adopt future technologies with a minimal need for new spending. This project is funded by a transfer from Fund 105, Cable Communications.

FY 2011 funding includes $843,705 to complete the lease-purchase obligation associated with the Public Service Radio Replacement project. Radio replacement was completed during FY 2007. In future years, a hardware refresh cycle will be needed for the subscriber radios associated with this project.

FY 2011 funding of $278,212 is recommended for continued support for the County's planned ongoing maintenance of essential Geographic Information System (GIS) data. FY 2011 funding represents support of the annual update of the GIS base map data for 25 percent of the County based on spring 2009 aerial imagery and other data. This funding combined with the previous three years of work will complete the first planned four year update cycle. GIS data is heavily used by the general public as well as numerous County agencies, including: Police, Fire and Rescue, Department of Public Works and Environmental Services, Transportation, Housing and Community Development, Planning and Zoning, and Tax Administration.

FY 2011 funding of $100,000 is included to begin requirements analysis for replacement of the existing case management system for the Community Services Board (CSB). Replacement of the existing SYNAPS system was recommended by the Beeman Commission Report. It is anticipated that replacement of the entire system will be required in FY 2012 and FY 2013.

Funding of $75,000 is included in FY 2011 to provide for continuing 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 outpace 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 2011 STATUS | FY 2006 ADOPTED | FY 2007 ADOPTED | FY 2008 ADOPTED | FY 2009 ADOPTED | FY 2010 ADOPTED | FY 2011 ADOPTED |
|---|---|---|---|---|---|---|---|---|
| **FUND 120** | | | | | | | | |
| IT0001 | Public Safety Comm.Network | On-going | 8,497,796 | 5,908,579 | 7,233,079 | 7,984,403 | 4,304,000 | 5,179,000 |
| | **TOTAL FUND 120** | | **8,497,796** | **5,908,579** | **7,233,079** | **7,984,403** | **4,304,000** | **5,179,000** |
| **FUND 104** | | | | | | | | |
| IT0004 | Geographic Information System | On-going | 491,180 | 411,000 | 386,680 | 158,840 | 150,000 | 278,212 |
| IT0006 | Tax / Revenue Administration | On-going | 866,930 | 0 | 0 | 0 | 0 | 0 |
| IT0010 | Information Technology Training | On-going | 300,000 | 200,000 | 250,000 | 100,000 | 50,000 | 75,000 |
| IT0011 | Doc. Management and Imaging | On-going | 1,493,410 | 1,351,629 | 1,145,000 | 0 | 0 | 0 |
| IT0015 | Health Management Information | Complete | 0 | 0 | 280,785 | 0 | 0 | 0 |
| IT0022 | Tactical Initiatives | On-going | 850,000 | 276,539 | 96,648 | 0 | 0 | 0 |
| IT0024 | E government | On-going | 500,000 | 475,000 | 275,000 | 208,190 | 0 | 300,000 |
| IT0039 | Court Modernization Projects | On-going | 350,000 | 0 | 0 | 988,960 | 0 | 0 |
| IT0048 | Incident Reporting &Training Sy. | On-going | 0 | 0 | 0 | 416,691 | 1,835,791 | 0 |
| IT0050 | Public Service Comm. Replc. | On-going | 491,864 | 588,517 | 632,166 | 663,223 | 781,901 | 862,882 |
| IT0054 | SYNAPS | On-going | 0 | 0 | 500,000 | 0 | 0 | 175,000 |
| IT0055 | Fairfax Inspec. Database Online | On-going | 520,775 | 285,376 | 351,000 | 0 | 0 | 0 |
| IT0056 | Pilot Crtm Tech.-Wayfinding | On-going | 0 | 0 | 0 | 0 | 182,000 | 75,000 |
| IT0058 | Remote Access | On-going | 50,000 | 100,000 | 0 | 0 | 0 | 0 |
| IT0059 | Child Care Technology Systems | On-going | 0 | 0 | 194,165 | 0 | 0 | 0 |
| IT0060 | Telecommunications Modernization | On-going | 3,300,000 | 4,495,000 | 1,757,461 | 1,534,750 | 2,100,000 | 1,742,000 |
| IT0061 | Information Technology Security | Complete | 450,000 | 225,000 | 244,160 | 300,752 | 0 | 0 |
| IT0062 | Police Records -ILEADS | Complete | 300,000 | 500,000 | 2,200,000 | 4,147,000 | 1,224,691 | 0 |
| IT0063 | Facility Space Modernization | Complete | 99,208 | 0 | 0 | 0 | 0 | 0 |
| IT0065 | Facility Maintenance Management | On-going | 548,750 | 0 | 392,000 | 188,218 | 0 | 665,550 |
| IT0067 | Stormwater Maintenance Mang. | Complete | 335,993 | 0 | 0 | 0 | 0 | 0 |
| IT0068 | Home occupation Permitting Sy. | Complete | | 46,375 | 0 | 0 | 0 | 0 |
| IT0069 | Integrated Housing Management | Complete | 160,000 | 222,500 | 0 | 0 | 0 | 0 |
| IT0071 | E-Summons and Court Scheduling | On-going | 405,000 | 552,500 | 0 | 200,000 | 0 | 350,000 |
| IT0072 | Citizen Relationship Management | On-going | 0 | 500,000 | 250,000 | 300,000 | 0 | 0 |
| IT0073 | UDIS Replacement | Complete | 0 | 820,000 | 0 | 0 | 0 | 0 |
| IT0074 | Data Analysis Reporting Tool | Complete | 0 | 238,000 | 450,000 | 0 | 0 | 0 |
| IT0076 | Interactive Web Intake Program | Complete | 0 | 130,000 | 0 | 0 | 0 | 0 |
| IT0078 | Courthouse Expansion Technology | On-going | 0 | 1,730,000 | 0 | 500,000 | 0 | 0 |
| IT0079 | FOCUS Project | On-going | 0 | 0 | 800,000 | 7,000,000 | 0 | 0 |
| IT0080 | RSIS | Complete | 0 | 0 | 217,200 | 0 | 0 | 0 |
| IT0081 | Housing Manag. Software Upgrade | Complete | 0 | 0 | 125,000 | 0 | 0 | 0 |
| IT0082 | Land Use Information Accessibility | On-going | 0 | | 300,000 | 0 | 0 | 0 |
| IT0083 | Public Safety Architecture Mod. | On-going | 0 | 0 | 2,687,750 | 1,892,458 | 3,156,293 | 843,705 |
| IT0084 | DFS- Data Reporting Project | New | | | | | | 100,000 |
| IT0085 | Loan Processing Sy. Replacement | On-going | 0 | 0 | 0 | 126,000 | 0 | 0 |
| IT0086 | Fire Station Alerting | On-going | 0 | 0 | 0 | 200,067 | 0 | 0 |
| IT0087 | ParkNet Security Upgrade | On-going | 0 | 0 | 0 | 179,571 | 0 | 0 |
| | **TOTAL FUND 104** | | **13,222,774** | **13,835,951** | **13,760,015** | **19,104,720** | **9,480,676** | **5,467,349** |
| | | | | | | | | |
| | **GRAND TOTAL: IT PROJECTS** | | **21,720,570** | **19,744,530** | **$20,993,094** | **26,337,799** | **13,784,676** | **10,646,349** |

## 3.2 Public Safety

### IT0001 Public Safety Communications Network/Systems

#### Project Description

This project provides for continued support and maintenance of the Department of Public Safety Communications (DPSC) 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. 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) provided the underlying infrastructure components and shared capabilities required for the implementation of a new integrated, interoperable Computer Aided Dispatch which was completed in November 2009.

This project will support the planned upgrade of Fairfax County's public safety radio system from an 11 site, SmartZone 3.0 Public Safety Trunked Radio System to a 12 site, 7.9 ASTRO25 Digital Trunked Radio System. The upgrade will transition the radio system to an IP based network, enhance the existing outdoor and in-building radio coverage of the current system, and relocate the radio system central controllers from vulnerable locations to the heavily secured Public Safety and Transportation Operation Center.

#### Project Goals

The goal of this project is 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 have been completed and a contract was awarded in January, 2010. Final system acceptance is planned for June 2011.

#### Project Budget

Funding is provided by Fund 120. FY 2011 funding of $1,600,000 is included in Fund 120 for the fourth year life cycle replacement of a five-year replacement cycle for Mobile Computer Terminals (MCTs). FY 2011 funding of $3,579,000 is provided in support of updating the County's Public Safety Radio System to the most current technology platform.

#### 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.

### IT0011.5 JDRC Electronic Records Management System

#### Project Description

Juvenile and Domestic Relations District Court plans to implement an electronic records management system to allow the Court to replace traditional paper-based case files with electronic court case records for case processing and management. The system will be designed to facilitate information management and the sharing of documents, objects, and unstructured data through the use of imaging, document management, records management, and enterprise application integration (EIA) tools. This document management system, which will be developed or procured, will allow the court to maintain its case records in electronic rather than paper format. The increasing volume of case records and the complex retention, confidentiality, and destruction criteria as mandated by the Virginia Code have severely impacted the court's ability to manage court documents. The Electronic Records Management System will convert new case records and retrieved existing

case records to electronic format in order to substantially reduce the need to rely on paper documents to initiate services to the public.

### Project Goals

An electronic document management system will provide improved security and integrity of records, reduce labor intensive and time consuming record retrieval and re-filling processes, provide simultaneous and instant access to court records, reduce costs associated with space and shelving for storage of paper documents, and provide a means of safeguarding documents with an electronic backup of court records.

### Progress to Date

The first set of processes for Informal Hearing/Monitored Diversion was implemented at the end of the third quarter of FY 2006. Functionality enabled in this first implementation included electronic document storage in case file format, workflow, form creation, scanning/scanned data routing, and enablement of electronic signatures. A portion of the baseline infrastructure was also built. The infrastructure houses the various environments for testing, training, acceptance, development and production.

Due to the nature of the remaining business areas to be covered and the new budget constraints the project will proceed with a more modest initial scope. The functionality will be built around the post-court process, specifically; case creation, document creation, user ability to view case records electronically, scanning and imaging, expungement, public viewing, and redaction. The user base will grow substantially; besides intake users presently utilizing the system, personnel will include the court clerk staff and public counter staff, judges, and the probation staff. A training period to accommodate the large number of users and diverse areas of duties will be planned. The initial Informal Hearing/Monitored Diversion functionality and content already in Documentum will be incorporated into the new project so as not to have two separate systems.

### *Milestones:*

- Successful implementation of processes for Informal Hearing and Monitored Diversion with use by intake officers, intake clerks and limited services staff
- Infrastructure to support application, docbases, scanning, etc. set-up (missing failover to another site in case of all server failure at the Government Center)
- Successful deployment of hardware including desktops, monitors, scanners, and eSignature pads, for all presently activated users
- Successful deployment of software, including new County/JDRDC image, Adobe, and signature software loaded on users machines, and scanner software loaded on scanning workstations
- Creation of the ERMS lab (utilized for testing of the application and training sessions) which consists of 8 student workstations, one instructor workstation, a scanner and scanning workstation, and eSignature capabilities
- On going work to determine the requirements and design for the remainder of the system.

**Project Budget** Funding is not available in FY 2011.

### Return on Investment

This project will reduce staff time dedicated to locating missing files, and retrieving and re-filing records. It will reduce the physical storage space required for court records, avoiding the cost of leased space near the courthouse. Response time will be expedited for internal and external customers at the Records and Fines and Costs counters, and public access to court records will be made easier and more efficient. Planned back-up systems will provide the necessary data security.

## IT0039 Circuit Court Technology

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)** – The Clerk's Office of the Fairfax Circuit Court is responsible for providing Fairfax citizens with reliable, timely, and accessible public records. As custodian of historical land records, the Land Records, Public and Services and Probate sections of the

Circuit Court recognized a critical need to preserve deteriorating paper documents, to ensure their availability for future generations. This project was initiated in an effort to preserve these documents and streamline the methods used to record, maintain, store, and view them. More than 39 million Land Record, Public Service and Probate images, dating from 1742 to the present have been digitized, indexed and loaded into the Court Public Access Network (CPAN). CPAN is 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 twenty-eight states, the District of Columbia, and internationally in India. Subscribers include citizens, title examiners, law offices, mortgage companies, banks, the Commissioner of Accounts, and County agencies.

**Case Management System (CMS)** – The Court Modernization project began in 1997 with the County-initiated merger of the Circuit Court Judicial Operations agency with the Circuit Court and Records agency, to reduce administrative duties and expenses. At the time of the merger, the Clerk of Court and the Circuit Court Judges identified that a common, more robust case management system was essential for a successful merger of the two agencies. The current case management system automates the process of how a case moves 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, and management and statistical reports. In 2006 and RFP was developed to replace the existing case management system, with a system which incorporated identified business processes and the latest developments in case management software, such as integrated Electronic filing and forms as well as document imaging and management. The RFP process was concluded in 2008 without an award. Circuit Court is working with Justice Systems Inc. (FullCourt) to negotiate a new contract to upgrade the existing case management software to the FullCourt Enterprise version which can provide imaging, electronic filing, DMV interfaces, as well as many other enhancements.

**Radio Frequency Identification (RFID) Project** will incorporate an RFID based system to assist in the real-time tracking of courts case file folders as they move throughout Circuit Court. The goal is to improve efficiency and customer services by greatly reducing staff time, effort and resources dedicated to searching and locating court case files. The project will utilize RFID tags affixed to case file folders so that court files can be tracked with strategically placed RFID readers. Additionally the system provides users the ability to submit queries for finding the real-time location of the folders or at a minimum the movement of the folders as well as last area in which the file was located as captured by the readers.

***Fairfax County Courthouse***

**Redaction** – The Commonwealth of Virginia passed legislation mandating the Clerk of the Circuit Court to redact the social security number (SSN) from all images in Circuit Court automated systems that are viewable via secure remote access. The Circuit Court has identified nearly 39 million images currently online and viewable through the Court Public Access Network (CPAN), a subscription internet service. Additionally, FCC requires a Commercial-Off-The-Shelf (COTS) software package with the capability to integrate into CARS for day-forward operations to remove SSN prior to final export of the new images into public view. Finally, the software must be capable of adding additional privacy requirements into the redaction process, back-file and day-forward, if future legislation is passed.

## Project Goals

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

- Expanded electronic filing of more than 100 land record document types
- Replacement of the 10 year old case management system with a fully integrated system providing civil and criminal processing, imaging and electronic filing capabilities
- Redaction of social security numbers from nearly 39 million images in CPAN and integration of the redaction software into existing workflows
- Increase the number of courtrooms which use new technologies to facilitate remote testimonies, audio and visual displays of evidence, 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 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.

## *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
- Expanded images and associated indices available on CPAN to 1742 – 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
- Creation and implementation of Electronic filing system – FY 2009.
- Electronic Filing System (EFS) rolled out to the public – FY 2010
- Integration of redacted data and processes mandated by the legislature – FY 2010
- Integrate with Identity Manager for single sign-on capabilities – FY 2010
- Integration of automated scanning in the marriage license application process for customers from nearby states – FY 2010
- Online Marriage License pre-application available to the public – FY 2011

### CMS

- Provided web-based availability of court information on CPAN-2005
- Implemented electronic docketing display directing public to the assigned courtroom – 2006
- Conducted demonstrations of case management systems recommended by the National Center of State Courts in preparation for the RFP – 2006
- The RFP process was concluded in 2008 without an award.

### RFID

- Architectural Review Board Approval – October 2009
- Infrastructure Requirements (data lines and electricity) – November 2009
- Submission of test data and identifying data elements – January/February 2010
- Implementation upon successful contract award – Spring 2010

### Redaction

- The contract was awarded in late April, 2010.

### Budget

FY 2011 funding of $568,824 from the Virginia State Technology Trust fund will support Circuit Court 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, Geographic Information Systems and the Department of Public Works and Environmental Services.

For CMS, 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 will save considerable time/effort/resources in tracking down case file folders in a repository that grows every year by approximately 27,000 files. The case file folders move from section to section throughout the court as processes necessitate, at any point judges, court administrators and clerk's staff can potentially be looking for the same case file. The RFID system will greatly improve operational efficiency and ensure safeguarding legal records and files. Nearly all retired judges from the Circuit Court bench have identified the need for better tracking of case files as a high priority for overall improvement.

The Redaction Project will enhance the security and integrity of CPAN by removing SSNs 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 mandate without incurring additional reprocessing costs.

## IT0048 Fire and Rescue Incident Reporting and Records Management Systems

### Project Description

The Fire and Rescue Department's (FRD) Incident Reporting and Records Management Project is part of a multi-system, multi-phase initiative called the Public Safety Architecture Modernization project designed to provide a unified technology platform across public safety agencies in Fairfax County.

### Project Goals

Project goals include the replacement of the legacy Computer Aided Dispatch (CAD) system with a new and fully integrated and interoperable Computer Aided Dispatch system. The new CAD system can be integrated with the Fire Records Management System (FRMS) and Electronic Patient Care Reporting System (ePCRS). Project plans also include upgrading the existing Fire Records Management System (incident reporting) from a legacy web based application to the vendor supported client\

server solution and implementation of a field based Electronic Patient Care Reporting System (ePCRS) to capture patient care reports electronically. Deployment of the FireRMS, the mobile component of FRMS, in order to digitally store emergency response pre-plans as well as provide a platform to update FRMS information is also included in this project. FireRMS Mobile can be deployed to all Fire and Rescue Department operational vehicles including command and tactical units.

## Progress to Date

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. This system enables the Fire and Rescue department to comply with the Commonwealth of Virginia's Office of Emergency Medical Services (OEMS) mandated emergency medical services (EMS) data reporting requirements. In addition, the data captured can be reviewed to assist the Fire and Rescue Department in both the strategic planning for future services and the tactical deployment of Emergency Medical units based on that information. The ePCRS is currently in full production.

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. Additional modules including those that cover Training, Personnel, Maintenance, Work Orders, Supplies and Inventory will be implemented in FY 2010. A limited deployment of FireRMS Mobile to command and tactical units will provide access to tactical and digital operational pre-plans for field personnel. Deployment to the balance of the operational fleet depends on availability of future funding.

### *Milestones:*

- Rolling go live and field tuning of ePCRS – April 2008
- Completion of Fire Records Management installation and configuration – FY 2009
- Implementation of additional modules of Fire Records Management – FY 2010
- Deployment of FireRMS Mobile and digital pre-plans to command and tactical units – FY 2010
- Future deployment of FireRMS Mobile to remaining operational fire vehicles.

## Project Budget

Additional funds have not been recommended in FY 2011 due to budget constraints.

## Return on Investment

A unified public safety architecture consisting of a modern records management system, integrated with CAD and other public safety agencies management systems enables more effective public safety operations in Fairfax County. This project ensures FRD's continued compliance with National Fire Protection Agency requirements, the Virginia EMS mandated reporting requirements, and will improve data management, statistical analysis, decision making capabilities, FRD's resource and apparatus standards, and improved operations.

The Electronic Patient Care Reporting System provides more timely and accurate tracking of patient transport information by creating more detailed patient treatment documents electronically with a tablet device directly interfaced with the current Computer Aided Dispatch system. With this system, billing information is readily, securely extracted, and electronically transmitted to the billing vendor which greatly improves the efficiency of billing and revenue collection. Patient care is enhanced through accurate documentation and information dissemination to the medical facility when the patient is transported. Furthermore, a reduction in the staff time required to complete patient care and incident reports provides units with a quicker "return to service" time.

Enhancements to the Fire Records Management System consolidates personnel, training and apparatus records in a single system of records, eliminating several legacy applications, and provides a central business system for the Fire Department. Deployment of FireRMS Mobile and availability of digital pre-plans to tactical field units are

critical to the Fire and Rescue Department operations. This functionality aids in determining the safest response to an emergency event. The overall Public Safety CAD/RMS system provides significant efficiencies for public safety information and technology utilization. The systems have been consolidated under a single strategy with the various components interfaced when appropriate for a comprehensive view supporting incident response.

## IT0056 Courtroom Technology – Electronic Way-Finding

### Description

The electronic way finding system allows for electronic displays of public information and court dockets on large flat-screen displays strategically placed throughout the courthouse. The docket system scrolls through defendants' names and courtroom assignments and provides citizens summoned to court an efficient way to locate their courtroom. This system replaces an inefficient paper based system whereby each day court staff manually posted reams of printed court dockets on bulletin boards spread throughout the courthouse.

### Project Goals

All three courts continue to maximize and share resources focused on providing citizens summoned to court an efficient way to locate their courtroom and reduce the congestion and confusion experienced by the public on the morning their court session is scheduled. This project seeks to improve citizen's access, internally and externally, to the Courts and allow all three Courts to share common resources while providing flexibility and adaptability to incorporate future changes in technology and court processes.

### Progress to Date

All three courts currently utilize electronic docket display and share an information wayfinding system that displays public information at the main entrance of the courthouse. Future endeavors seek to integrate the docket display systems with the Supreme Court of Virginia (SCV). In addition, future efforts will focus on expanded use of the existing systems and additional support for the public information desk via wayfinding, kiosks, etc.

### *Milestones:*

- Phase I – Pilot GDC Traffic Dockets, expand GDC to include civil and criminal dockets, completed FY2006
- Phase II – Add displays for Circuit Court civil and criminal combined, completed November 2005
- Phase III – add way finding at Main Entrance, completed FY 2009
- Phase III – add new displays for JDRC, completed FY 2010
- Phase IV – additional Circuit Court for renovated wing, FY 2010
- Phase IV – additional GDC for renovated wing, FY 2010
- Phase V – add functionality to assist public information center, FY 2011

### Budget

FY 2011 funding of $75,000 is provided to complete installation of a unified electronic Way finding system for the Fairfax County Courthouse.

***Fairfax County General District Court – Traffic Dockets***

### Return on Investment

In implementing electronic way-finding, the objective continues to be on providing citizens summoned to court an efficient way to locate their courtrooms and reduce congestion and confusion experienced by the public. The primary benefit will be improved efficiencies, the facilitation of court processes, and services that provide a direct benefit to the citizens, businesses and employees that reside in Fairfax County and conduct business with the Courts.

## IT0062 Police Records Management System – I/LEADS

### Description

The goal of this project is to implement a modern, intelligent, comprehensive Law Enforcement Records Management System (I/LEADS) that will improve reliability, accuracy, quality of data, and will operate on the principles of "single point of data entry" and query. The I/LEADS System replaces the legacy Police Records Management System and is based upon proven technology derived from current industry and County standards. The system expands the capacity of the Police Department, allowing it to better analyze – statistically and through spatial techniques – data on incidents and personnel. It also aids in identifying trends, and assists in staffing decisions and monitoring departmental effectiveness. Intelligence led policing, improved criminal justice, and overall strategic public safety resource deployment will be improved upon implementation.

### Project Goals

The new police records management application I/LEADS will integrate with the Computer Aided Dispatch (CAD) system in the Department of Public Safety Communications, ensuring a unified technology platform approach that seamlessly shares processes and data across public safety functions and leverages available technologies. I/LEADS increases the Police Department's ability to prevent, respond to, manage, and analyze situations that threaten the safety and property of citizens.

### Progress to Date

I/LEADS system went live in January 2010. This implementation is one of the largest technology initiatives and the most extensive records management upgrade for the Police Department.

### *Milestones*

- Data mapping and data conversion from the Old PRMS to (I/LEADS) – FY 2009
- Installation and configuration of software (ILEADS) – FY 2009
- Acceptance testing – FY 2009
- Go Live to production – January 2010
- End user training – in progress through FY 2010

### Budget

Additional funding is not recommended in FY 2011.

### Return on Investment

A unified public safety architecture consisting of a modern records management system, integrated with CAD and other public safety agencies management systems, will result in more cost effective public safety operations. This project will ultimately impact nearly all aspects of police work and police information collection, and link them through an integrated system with the new CAD. A modern system that assures accurate, timely, reliable and accessible information on events, county geography and police information will permit the Police Department to efficiently act upon events, from initial response through tracking, investigation and reporting. Additionally, capture and storage of reliable and accessible data from the system will result in the ability to effectively address staffing crime analysis resource allocation, tactical planning and strategic planning. The new system will provide opportunities to increase effectiveness by eliminating redundant work and open up opportunities for information sharing and interoperability between law enforcement agencies. This is a significant tool in developing investigative leads, linking crimes across jurisdictional boundaries, and conducting crime analysis.

## IT0071 Court Scheduling and Electronic Summons

### Project Description

This project is designed to develop automated solutions to streamline the traffic summons and court scheduling processes by managing court dockets in a manner that will minimize high and low periods of activity and implement of a Electronic Summons application to automate the capture and transfer of traffic summons information.

### Progress to Date

Phase I

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. This phase of the project was successfully completed in FY 2010 with the addition of ticket writing groups external to Fairfax County such as the Virginia State Police.

Phase II

This phase consisted of the implementation of an electronic summons solution for traffic summons in Fairfax County. The 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 aims to eliminate manual data entry, ensure data integrity, provide accurate code section violations to officers in the field, facilitate faster and safer ticketing process for officers and enhance public access to traffic ticket and case information.

### Project Goals

Goals are to provide the public efficient and timely electronic access to cases to enhance the public's ability to utilize automated options for review of case information and payment of fines; and manage court dockets more effectively therefore improving service to court users and the public. The Court Scheduling System was designed to streamline and improve management of traffic court dates between the Fairfax County General District Court and law enforcement agencies. The E-summons project aims to reduce data entry efforts and increase data quality as it relates to accuracy, integrity, reliability, and timeliness.

### Project Budget

Funding of $350,000 is included in FY 2011 to continue implementation of an E-summons solution in Fairfax County.

### Return on Investment

Automated solutions will allow for the reallocation of existing staff to positions that provide direct assistance to the public, ensure greater accuracy in capturing defendant information, eliminate data entry errors with potentially serious repercussions for defendant, allows 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.

## IT0078 Courthouse Expansion Technology Project

### Project Description

This project is committed to the planning, design and implementation of modern courtroom technologies for new and renovated courtrooms constructed as part of the on-going Courthouse expansion efforts. The evolution of courtroom technologies has resulted in the development of a Courtroom Technology Management System (CTMS) that successfully integrates modern courtroom technologies into traditional courtroom activities.

The new high-tech courtrooms and CTMS provide the capabilities for integrated and electronic evidence presentation; video conferencing for arraignments, remote witness and secluded witness; real-time court recording; integrated assistive listening and interpretive systems as well as Judges' control of the technologies from the bench and overflow capacity to observe courtroom activity from another courtroom. All new high-tech courtrooms include multiple flat-screen displays allowing the judge, jury and gallery to view unobstructed presentations of evidence with the ability to pause,

enhance, annotate and print. The courtrooms contain touch-screen panels for the judge, clerk and attorneys to control multiple microphones and video displays for the judge, clerk, court recorder, attorneys, jurors and gallery when presenting and viewing evidence and remote witnesses.

The CTMS is overseen by a centralized Courtroom Technology Office (CrTO) and was developed in partnership between the three Fairfax County Courts; Circuit Court, General District Court, Juvenile and Domestic Relations District Court and the Fairfax County Department of Information Technology.

## Project Goals

The primary goals and objectives were and continue to be to improve citizens access, internally and externally, to the Courts, facilitate trials and hearings in the most effective and efficient means possible, allow for all three Courts to share common resources and provide for flexibility and adaptability to incorporate future changes in technology and court proceedings. The CTMS meets these objectives by providing consistency and standardization in all courtrooms for all three Fairfax Courts and achieving courtroom efficiencies and operations while optimizing available resources.

## Progress to Date

The CTMS evolved after a successful Courtroom 5E High Technology Courtroom Prototype was completed in October of 2006. The first phase of the CTMS project was completed during 2008 and launched five new, high-tech courtrooms connected over a fiber backbone through a centralized Master Control Room (MCR) and distributed to other ancillary facilities to include the Adult Detention Center (ADC) and secluded witness rooms. During August 2009, the Juvenile and Domestic Relations District Court relocated to the new courthouse whereby nine new high-tech courtrooms were integrated with the CTMS. Along with the original Courtroom 5E prototype, the Fairfax Courts now offer 15 courtrooms with high-tech capabilities. Renovation efforts for 26 older, existing courtrooms are under consideration. The County plans to renovate two or three existing courtrooms during calendar year 2010. Future modifications to CTMS include adding functionality for electronic court recordings, remote interpreting and wireless.

***Fairfax County Circuit Court – Courtroom 5J***

***Milestones:***

- Phase I complete – Courtroom 5E prototype/ cable cutting -Oct 2006
- Completion of the master courtroom technology plan/design for new / renovated courtroom – January 2008
- Phase II complete – technology roll out to 5 new courtrooms for Circuit Court and GDC- Dec 2008
- Phase III complete – technology roll out of 9 new courtrooms, master control room and secluded witness room for the Juvenile and Domestic Relations Court – FY 2010
- Phase IV – renovations and shelled courtrooms- two of twenty six existing courtrooms will be renovated during FY 2010-FY 2011. The courtroom renovation project is funded through the County's Fund 312 (Public Safety Construction). No additional funding is allocated in fund 312 or fund 104 beyond FY 2010.

### Project Budget

Additional funding is not available for FY 2011.

### Return on Investment

The CTMS allows all new and renovated courtrooms to share a common infrastructure with distributed services through a centralized Master Control Room (MCR). The distributed environment provides consistency, standardization and scalability between the three courts and is designed to meet future growth and changes in technology. The primary benefit continues to be improved efficiencies and the facilitation of court processes and services that provide a direct impact to citizens, businesses, and employees.

Newly implemented processes such as prisoner arraignments are conducted on a daily basis both locally and remotely from any of the high-tech courtrooms and Adult Detention Center saving significant staff and travel time. The electronic evidence presentation functionality allows for various electronic evidence sources, such as CD/DVD/VCR, document camera, enhanced x-ray, computer video and multi-audio interface with annotation and printing capabilities to be submitted as evidence reducing the volume of paper requirements while facilitating and speeding up the trial process.

## IT0083 Public Safety Architecture Modernization

### Project Description

The Public Safety Architecture Modernization project supports implementation of common infrastructure supporting integrated Computer Aided Dispatch (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 Geographic Information System (GIS) to meet public safety requirements.

### Project Goals

The project will implement 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. In this multi-track and multi-phase project, the legacy CAD and Mobile, Police RMS and Fire and Rescue RMS Systems will be replaced.

### Progress to Date

In May 2008 a new Emergency Patient Care Reporting system (EPCR) was the first application to be implemented as part of this project. 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 work will be focused on completing planned product enhancements and post implementation tasks.

All Fire and Police Department work sites have been upgraded with wireless hotspots. They now support the EPCR application and CAD Mobile. Both Police Records Management (ILEADS) and other Fire and Rescue applications are also being supported via wireless technologies. The public safety wireless hotspots will provide data communications to the field units, which enable updates to the systems to be pushed out over an internal network instead of having to manually touch

every one of the mobile units in the County fleet. Additionally, a commercial cellular carrier was selected to provide the primary means of communication between the mobile devices in the field and the wired infrastructure located in the McConnell Public Safety Transportation and Operations Center (MPSTOC). In addition to the aforementioned goals, a significant amount of geospatial Information was captured, verified and incorporated into the new data model adopted by the Fairfax County Geographic Information System (GIS) Branch. This information will allow the CAD system to more accurately locate an incident and actually route first responders to the incident using the data that was collected during this phase of the project.

## Project Budget

FY 2011 Funding of $843,705 is provided to support commercial wireless broadband, planned product enhancements and post implementation tasks.

## 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.

## IT0086 Fire Station Alerting Technology Replacement

### Project Description

The purpose of this project is to provide a turn-key system replacement of fire station alerting 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 is a technology lifecycle replacement that is required in order to bring the Fire and Rescue Department's 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 fire station alerting 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 the remaining infrastructure and component will be planned as funding becomes available.

### *Milestones:*

- Contract awarded – FY 2009
- Design complete – FY 2009
- Install basic Fire Station Alerting system in all stations – FY 2010

### Project Budget

Due to budget constraints FY 2011 funds are not available.

### 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 Computer Aided Dispatch 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.

## 3.3 CORPORATE ENTERPRISE

### IT0004.2 GIS – Orthoimagery Update

#### 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 enough resolution and accuracy to be useful for most county applications and users.

#### Progress to Date

With the acquisition of state imagery in FY 2007 and FY 2009, the four-year imagery update cycle is up-to-date. Due to a change in the state's scheduling, the County benefitted from a one time 2-year update cycle. The state is now back on its 4 year cycle with the County scheduled to be flown again in 2013 as part of the state-wide effort. The county has cost-sharing partnership with the state to obtain the higher resolution imagery for the specific needs of the county.

#### Project Budget

No new funding for orthoimagery was included in the FY 2011 budget. Funds will be needed in FY 2013 to pay for the county's share of the cost to upgrade the state imagery to meet the necessary accuracy and resolution standards.

#### 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 to assist various program management efforts across the county. 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 to 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). 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 not just an internal product but 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 over a million maps per year enabling public users the ability to view parcel outlines, hydrography, as well as major and minor roads.

### IT0004.3 GIS Oblique Imagery

#### 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,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 the field time involved in their work by allowing virtual visitation. These virtual visitations enable staff to easily assess values and conduct analyses on buildings not previously possible. Additionally oblique imagery is instrumental in identifying sites for quick dispatch of responders to 911 calls. This 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). The 3-D imagery is essential in meeting a

board mandated requirement. This 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.

### Project Goal

This project's goal is to provide oblique imagery as a useful and key component of the County's spatial data warehouse.

### Progress to Date

The County has complete oblique imagery libraries for calendar years 2003, 2005, 2007 and 2009. The next update is scheduled for 2011. Originally five agencies: Police, Fire and Rescue, Tax Administration, Planning and Zoning, and Information Technology undertook a careful review of the technology and data and realized it provided significant value to their operations. These were the original supporters and each agency now makes substantial use of oblique imagery.

The imagery has progressively been made available through a series of software deployments that support it. This effort includes regular training conducted by DIT in support of promoting the dissemination of the program for staff. The use of the oblique imagery continues to increase; especially, since it is now available internally via the GIS-based GEM web application which has made accessing and using the imagery easier and available to staff at their desktops. Currently in addition to CAD/911 usage, there are over 160 unique users of oblique imagery who log over on average over 7,000 hours per month using oblique imagery. In support, GIS staff coordinate agency needs, specify requirements, perform QA, and provide the training and desktop implementation at no cost to agencies. The County does share the imagery with the town of Herndon and Vienna since they are within the boundaries of Fairfax County.

### Project Budget

Funding of $128,212 is recommended in FY 2011 to support contractual costs for obtaining imagery planned for spring of 2011.

### Return on Investment

The oblique imagery has been valuable to many agencies and as time has past it has been adopted for more uses. In particular, The Department of Tax Administration (DTA) has found it very useful in supporting their operations. In FY 2010, DTA increased usage of oblique imagery and successfully reduced field inspection time and costs further. As mentioned above, oblique imagery is also used in the new CAD/911 system which is a new development in FY 2010. That system integrates oblique imagery, providing quick and easy access to it. Call takers and dispatchers use the oblique imagery daily to correctly identify incident location and plan responses to incidents.

The oblique imagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. 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 daily in the new 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. Assessors are aided in the ability to determine the siding buildings – an important component of a property assessment. Oblique imagery is also the source of 3-D imagery since it contains building facades (skins) and elevation information, essential for effective representation for the actual areas. As a result of past funding, no additional aerial imagery flights were necessary to support the 3-D modeling since the existing imagery was able to serve as the source of the images required

## IT0004.4 GIS Planimetric Data Acquisition Program

### Project Description

Planimetric data is planar data (2D) derived from observable natural and manmade features visible on orthophotography. 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 new CAD/911 system. This update program is replacing the existing planimetric data which was derived from aerial photography flown in the spring 1997. Since that time the county has grown considerably, adding new housing, commercial locations, roads, storm water management

features, and other man made features. Additionally the topography has changed with new development. This has left the 1997 information outdated. The update program will leverage the 2007 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 will be more comprehensive and is expected to serve more county needs. Data sets will include impervious features; such as roads, pools, basketball courts and driveways; and will 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

As stated, the county's planimetric features, digital terrain model (DTM), and topographic contouring data need updating to reflect extensive topographical change and development activities. Through user surveys, agencies have indicated that they would benefit from regular planimetric data updates.

This project began from funding provided in FY 2010. A detailed statement of work was developed, and the SE quadrant of the county, which is densely populated, was selected for the initial quadrant. The aerial photography source for the first quadrant data update was from the spring 2007 state imagery. Results from the first quadrant will be available in mid FY 2010. An additional quarter, the NW quadrant, will also be compiled from the 2007 state imagery starting in mid FY 2010.

## Project Budget

This project has been jointly funded by Department of Public Works and Environmental Services (DPWES) and Department of Information Technology (DIT) through fund 104 for the first two quadrants of the county (SE, and NE). In FY 2011 $150,000 is provided in Fund 104 for continued support for the planned initiative to update GIS planimetric data in Fairfax County.

## Return on Investment

The planimetric, DTM, and topographic contouring at 2' contour interval data update project will provide 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. 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 are also an important component in the mapping applications in the County's new Computer Aided Dispatch system. These data are used in all the public safety vehicles with CAD (about 1,400) and also by the dispatchers and call takers. Additionally, capture of many impervious surface features not currently present in the GIS enterprise database is a critical requirement for effective planning, designing, and management of storm water projects. Data sharing rather than redundant data capture avoids duplicative data creation and collection costs.

## IIT0006 Tax/Revenue Administration

### Project Description

This project provides the information systems development and technology infrastructure required to redesign the County's tax and revenue systems. The Tax/Revenue project facilitates a simpler process for citizens to fulfill their tax obligations and pay for services by modernizing the internal processes used for assessing, billing, and collecting County taxes and other revenues. In FY 2002, the County began replacement of the aging real estate mainframe system with a commercial-off-the-shelf (COTS) product called Integrated Assessment System (IAS). Implementation of IAS 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. The current focus of the project is to migrate to the next generation of the IAS product, the WEB based iasWorld.

### Project Goals

Project goals continue to focus on tax and revenue modernization by implementing the remaining web-based modules of the client server real estate system. The implementation of additional product modules will enhance the efficiency of property assessing and inspection by field staff, enable a coordinated approach to managing public inquiries and correspondence, streamline common real estate transactions through customized forms, and provide the core technical architecture to enable the other interactive modules to operate.

### Progress to Date

The assessment administration, CAMA (assessment), accounts receivable and delinquent collection modules of the client server tax system are operational and fully integrated with the County's cashiering system. These modules comprise the core tax system. Implementation of the web-based product, IasWorld, will be complete in FY 2010.

### *Milestones:*

- Implementation of IAS modules with the exception of the Delinquent Collections Tracking product- February 2004
- Implementation of the iCare internet real estate property information lookup tool (Internet plug in for IAS) and integration of IAS with the department's cashiering COTS software Revenue collector - June 2004
- IInstallation of the WEB citizen inquiry tracking system module of iasWorld, iRespond) – June 2007
- Implementation of the web- based real estate system iasWorld – June 2008
- iMaintain Module Implementation – FY 2009
- iField Module Implementation – FY 2009
- iTax Implementation – FY 2009 – FY 2010

### Project Budget

No additional funding is provided in FY 2011.

### Return on Investment

The remaining IAS product for installation (iasWorld) will permit improved customer service without the addition of staff. Staffing can be held constant as inquiries and correspondence increase as a result of population growth, changing demographics, and changes in real estate assessments and rates. Citizen inquiries will be more effectively managed, and response turnaround times improved. In addition, real estate appraisal staffs can more accurately collect and record property characteristic data from site inspections, as staff will have the ability to input and transmit data from the field. Improvements in data quality and currency will better equip the County to provide more equitable assessments, defend appealed assessments, and improve the timeliness of revenue generated from the real time recording of property improvements. In addition, the new process eliminates redundant data entry work by support staff, as web-based screens will have consolidated fields from several screens in the client-server system. By operating the real estate application within the County's infrastructure, staff can ensure the security of County data communicated over the internet, monitor the application on a 24/7 basis for optimal availability, and ensure secure access.

## IT0011.11 Electronic Accounts Payable System

### Project Description

This project provides a solution that meets the County's goals for an electronic accounts payable process within the current infrastructure using adaptable technology to meet future requirements. Additionally, it provides for a phased-in implementation with minimum impact on existing business processes. The project will develop a methodology to utilize new accounts payable electronic processing methods to dramatically reduce the amount of time and effort required to process accounts payable transactions. The new methodologies will provide in-depth data analysis, targeted audit procedures, and improved internal controls to identify and correct weaknesses in the County's accounts payable processes.

### Project Goals

This project aims to improve the operating efficiency of the entire countywide decentralized accounts payable process, and at the same time achieve the Board of Supervisors' mandates to reduce paperwork and support telework. These goals will be achieved by maximizing the County's use of proven imaging, e-signature, and workflow technologies to replace reliance on paper document processing. In addition to the improved process efficiencies and cost savings expected, it is anticipated that this project will increase countywide internal controls and management reporting by utilizing automated reporting techniques to improve analysis of the County's accounts payable processes.

### Progress to Date

The electronic invoice package selected as the solution, Imagitek's Prodagio A/P, was installed in the production environment and the first go-live agency (DHR) was October 2007, with rollout to the two other proof-of-concept agencies (DIT and FMD) later the same month. Currently all county agencies are routing and approving invoices in the system. Due to the complexity of the system and logistics of transitioning all agencies from the old processes for approving invoices, the project is deployed in a phased approach:

Phase I – Roll out of EAPS to all county agencies is now complete. All county agencies were trained and transitioned to EAPS invoice processing within the first quarter of FY 2010.

Phase II – The process of incorporating the routing and approval of non- Purchase Order (PO) documents was piloted with four different agencies after year end processing in FY 2009. Following a few modifications indicated by implementation in the pilot agencies, the non PO processing will be extended to all county agencies in FY 2010 and FY 2011.

Phase III – System upgrades and possible enhancements for placing all approvals within application, accepting electronic invoice submissions via a standardized file, creating a vendor portal and developing a retention plan for invoice documents.

### *Milestones:*

- Documented Proof-of-Concept Solution, November 2007
- Countywide- implementation of Phase I – completion Feb 2008
- County wide implementation of PO invoices – June 2008
- Enhanced Reporting – July 2008-January 2009
- Statement of Work for incorporating email and fax invoices September 2008
- Non-PO invoice – pilot-July 2008 – June 2009
- Documented completed County wide solution for Electronic Accounts Payable – FY 2010
- County wide Non-PO rollout – FY 2010-FY 2011

### Project Budget

Future technology enhancements will be accomplished through the Legacy Systems Replacement project (IT0079). No additional funding required in FY 2011.

### Return on Investment

This initiative involves the integration of the County's financial and procurement systems which has resulted in a paperless work process and enhanced management reporting. The greatest financial returns from implementing the electronic accounts payable process is reduced staff processing, document filing retrieval time, copier charges and storage costs. Further faster invoice processing maximizes opportunities to realize vendor discount terms. The electronic accounts payable process helps improve the County's relationship with its vendor community by facilitating communication.

## IT0011.13 Automated Board Meeting Records

### 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 Goal

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

### Progress to Date

Develop user requirements for incorporating the Board of Supervisors' meeting videos with the agendas to create a robust easily accessible and searchable on-line record. Project will utilize the enterprise infrastructure for electronic records management.

### Project Budget

No additional funding is required for FY 2011.

### 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.

## IT0022.9 Correspondence Tracking and Management System

### Project Description

The Correspondence Tracking and Management project enables County agencies to capture communications, track contacts, events and complaints in order to enhance staff and interagency communication. Since its initial launch in 1999, this project continues to expand the implementation of a proven Commercial-Off-The-Shelf (COTS) product known as Intranet Quorum (IQ) which has been successfully deployed in several County agencies. IQ is a Correspondence Tracking and Management System that provides an integrated approach to delivering services to citizens, colleagues, and staff. In addition, IQ offers a variety of data points for easy and complete reporting.

### Project Goals

Project goals include 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 extend 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, share information. These benefits are amplified by the delivery of a seamless constituent interface and enhanced customer service.

### Progress to Date

IQ was initially deployed at the offices of the Board of Supervisors, the County Executive, and the Clerk to the Board. Expansion to other agencies including the Office of Public Affairs, Consumer Protection, Human Rights Office, 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 has been part of this effort. Over time, address data from the Geographic Information System (GIS) has been utilized with IQ to increase agency productivity. Migration to the new version IQ3 has been phased in across user agencies. This allows staff to perfect their migration strategies and application knowledge as well as minimize impact on the agency's productivity. In FY 2010-FY 2011 project work will continue support for current IQ users.

### Project Budget

No funding is provided in FY 2011.

### Return on Investment

Successful implementation provides enhanced communications between County staff, departments, and agencies, thus allowing agencies to share and monitor the status of projects, responses, and truck

other issues and events as those items progress through the County processes. The project enables agencies to automate business processes and workflows, reduce duplication of effort, and enable the sharing the information between agencies using present e-mail methods. These benefits are amplified by the delivery of a seamless constituent interface and enhanced customer service. In addition, this solution does not preclude installations of applications that support the County's IT architecture, or interact with other agencies' CRM applications.

## IT0024.2 Public Access Technologies- Interactive Voice Response

### 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 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.

Current Applications:

CEX: Medical Registry services in 7 different languages

COURTS: Circuit, General District & Juvenile, Court Information Line (General Information, Traffic and Criminal Fine Payment by credit card, access to specific cases),

CSP: Consolidate Services Planning survey of services provided,

DPWES: Building Inspections (Requests and Cancellations),

DPWES: Permit/Plan/Building Inspections Status Inquiry

DPWES: Scheduling Special Pickups of brush or bulk items using customer address,

DTA: Real Estate Data (spoken data and FAX on Demand by property address),

DTA: Real Estate and Personal Property Tax Payments

FS: Survey of services to check the quality of service

FIRE: Fire & Rescue's Media Information Line (after-hours fire incident updates),

HCD: Housing & Community Development's Housing Waiting List (gives position on list),

HEALTH: Health Department Information and Departmental transfers,

HR: County jobs availability and submitted resume status

LIBRARY: Library Information Line (Locate Libraries by ZIP code, phone number search),

OFC: Office For Children Training and Class schedules registration Line,

OPA: Public Affairs 324-INFO Line (general County information, phone number search),

POLICE: Victim Services Information Line (query of offender release date information),

DIT: IT Help Desk- for all County computer related problems.

### Project Budget

The program requires on-going support from E-Gov and telecommunications staff to plan and configure new systems, and to trouble-shoot telecommunications system problems.

### 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.

## IT0024.3 E-Government- Internet/Intranet Initiatives

### 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, any time, 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 52,445 visitors per day, which equates to an average of 297,013 page views per day and an average of 1,632,298 hits per day. Approximately 55 County agencies have a presence on the site. The functionality of site has expanded significantly with the addition of significant content and information. New and updated business transactions have also been added during this period.

On going strategy include '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. A few examples include wikis (community developed reference material), podcast (subscription based audio information), RSS or Really Simple Syndication feeds (subscription-based information), Second Life (virtual reality) and Twitter (social networking). The extensive use of Web 2.0 in social networking enables wide spread collaboration and information sharing, and enables individuals to rapidly share news an opinions worldwide. The County extended its presence by launching content on three social networking sites:
Facebook (http://www.facebook.com/group.php?gid=7901829756),
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, County wide 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. FY 2010-FY 2011 goals include developing a mobile application for the public web, as well as delivering the County's public web site content in multiple languages.

## 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 – Infoweb Redesign

The look and feel of the main page of the Infoweb (Intranet site) was redesigned, and continues to be enhanced. This is an on-going process that links with agency operational improvements.

Approximately 55 County agencies now have a presence on the site, offering more than 11,000 HTML documents, 12,500 PDF documents, and 15,000 images on the Internet 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 Infoweb 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 2011 plans include the development of collaborative functionalities for County agencies including implementation of a new FairfaxNet SharePoint portal to provide a centralized resource for County content, forms, policies, news, applications, and training.

### 5 – Web Content Management

Web Content Management will deal with 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

Funding of $300,000 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.

## IT0072 Customer Relationship Management (CRM)

### Project Description

This project provides the foundation for a comprehensive call center technology solution based on an open architecture, providing an opportunity for sharing process, resources and critical information across multiple Fairfax County call centers. This project addresses service needs by remedying existing business problems while improving operation efficiency and upgrading the technology infrastructure for all county call centers.

### Project Goals

The goal of this project is to implement a comprehensive CRM application which will use industry standard call center technologies and incorporate existing county automated tracking systems. The objective of county call centers is to provide timely and appropriate assistance based on the citizens' needs. Additionally the goal is to provide an opportunity to leverage call center resources through virtual sessions. This project does not build or consolidate existing call centers nor create a central foundation supporting call center processes, integration, and sharing of resources as appropriate in improving overall services. This project is complimented by the telephone modernization project, which will improve the telephony foundation needed to distribute and track calls.

### Progress to Date

CRM application was deployed to support three Office of Public Affairs customer center sites. 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 (OPA) processed over 33,550 requests for county information and resources in the past year and

half. The Office of Public and Private Partnerships (OPPP) is the clearinghouse for partnership information in Fairfax County. Efforts in OPPP have consolidated disperse contact lists, business partners, and resources enabling staff to utilize the system as a data depository for contacts, accounts, cases, service requests, solutions, correspondence, activities, and management of allocated staff and volunteer resources. Seible CRM solution was implemented in the Lee and Dranesville District Board of Supervisor Offices in FY 2009. 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. Implementation of Computer Telephony Integration and on line user training is planned for FY 2011.

### *Milestones:*

- OPA Pilot Implementation completed.
- Agency Assessments – March, 2008
- Agency Integration/Training – June, 2008
- Agency Deployments – December, 2008
- Implementation of Computer Telephony Integration and on line user training- FY 2010-FY 2011

### Project Budget

FY 2011 funding is not available.

### Return on Investment

Return on Investment is realized from increased productivity from automation and/or streamlining of telephone processes, improved and reliable data capture required for mandatory service reporting, enhanced citizen communication and issues resolution, as well as delivery of improved operational efficiencies. CRM will allow improved historical data tracking through one system, increase awareness and insight to ensure appropriate follow up of citizen needs and concerns. It offers a more holistic view and aids in making well informed decisions about service delivery and improves communication.

## IT0079 Fairfax County Unified System – FOCUS

### Project Description

Fairfax County government and school system have embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support finance (FAMIS), human resources (government: PRISM -school: LAWSON), budget (BPREP), procurement (CASPS) and related administrative applications with an integrated approach that has the flexibility to meet current and future requirements. The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data.

The current 'stovepipe' legacy business systems are on various, old technology platforms using a variety of hardware and software architectures integrated through a number of interfaces and reporting tools. Previous assessments of these aging systems revealed that they are past their projected useful lifecycle, no longer meet today's technology standards, and do not meet the demands of resource and financial management and decision-making. System limitations continue to drive a proliferation of multi-step tasks to produce desired data and the development of numerous 'workaround' systems to gain necessary functionality currently not available. This has also resulted in an exponentially increased risk for fraud and security vulnerabilities. Due to their age, many of these systems have no vendor support and rely on retirement eligible in-house staff for maintenance.

### Project Goal

A governance body of senior officials of the County and school system stakeholder agencies has guided the procurement of an integrated financial/procurement/human resources/budget suite that will support agencies in the delivery of government and school services and activities; take advantage of 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 will foster an environment of change and redesign to allow for more efficient and effective processes.

### Progress to Date

A joint Steering Committee and project team comprised of County and School personnel has been formed to

provide guidance and resources for day-to-day project activities. The Government Financial Officers Association (GFOA) is under contract to provide direction and resources in the identification of current processes, creation of requirements, and preparation and review of the procurement phases of the planning effort. Other work completed includes an assessment of the legacy systems used to support core business functions; identification, review and streamlining of existing business processes; identification and refinement of functional business requirements necessary in the software; and the identification and mapping of core business processes, which involved the production of more than 200 diagrams to document 64 key current business processes. More than 400 County and school staff from a cross section of the user community including functional managers, subject matter experts and end users assisted in this effort. Other achievements include a requirements gathering and validation process which involved examining 17 core processes in the finance, procurement, budget and human resource/payroll areas to identify what users need in a new system, followed by validation of those requirements. This provided the documentation necessary to move into the software procurement phase of the project which was completed in the summer of 2009 with the purchase of SAP software. The final phase of the planning effort, before officially launching project kick-off, is the procurement of SAP system implementation services which commenced in the fall of 2009. These services will provide the County necessary functional and technical expertise and resources to support the project goals as stated above. This procurement process is ongoing and is expected to be completed in the summer of 2010.

## Project Budget

Project funding will be required over the remaining life of the project and will be requested at appropriate times to ensure milestone payments are met.

## Return on Investment

The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution. With the migration to a more standard, supportable database and development environment that incorporates workflow and Web technology, the project expects to create a collaborative environment where access to data and information, even from remote locations, is based on system "look and feel" flexibility, intuition, data definition, data stewardship and security. The project will:

- Provide a seamless integration of a new system with existing applications;
- Reduce the number of shadow systems and reconciliations between systems;
- Align the reporting strategy with the County government and school system overall data reporting and consistent information management throughout the organizations;
- Incorporate fully integrated best business practices;
- Develop a system that is user-friendly and that empowers users to improve their business processes;
- Add and improve functionality in back-office functional areas;
- Improve the quality and accessibility of information for decision support;
- Reduce redundant data entry, storage, and paper processing;
- Support the countywide balanced scorecard initiative;
- Improve operational effectiveness and productivity;
- Enhance web self-service and improve customer service; and
- Retire existing legacy and back office systems and tools.

## 3.4 TECHNOLOGY INFRASTRUCTURE

### IT0050 Public Service Communication Replacement

#### 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. 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. The previous network did not meet the user needs for additional coverage nor provide for future growth or for advanced features, such as mobile data communications.

#### Project Goals

The new radio system eliminates sever geographical coverage problem for County agencies, and provides reliable communications for the County's fleet, and interoperability supporting emergency management activities, and communications for an increasingly mobile workforce. The system also provides a fully independent backup radio system for public safety agencies.

#### Progress to Date

Prior year activities have consisted of the completion of a consultant study with recommendation for the replacement systems, the development of requirement specifications, contract award, tower site acquisition, and FCC licensing requirement activities, construction, and activation of transmitting tower sites, and the migration of schools and county fleets to the new system. The entire network and the remaining migrations were completed in FY 2007.

#### Project Budget

The FY 2011 project cost is estimated to be $2,062,882 and includes the final year of a seven-year annual lease-purchase payments for the new radio network infrastructure and operating costs during the year. Based on a portion of project costs, derived from the number of radio users that will be operating on the system as a percent of the total number of radios; $1,279,022 will be recovered from Non-General Fund Supported agencies, the Fairfax County Public Schools and Fairfax County Water Authority in FY 2011, netting in a general fund cost to the County of $783,860.

#### Return on Investment

In addition to enhanced reliability and coverage, the new network eliminates the two zones within the County and provides for seamless coverage on one system regardless of location, as well as provides ample reserve capacity for peak use periods and future fleet expansion. The replacement system provides reliable radio coverage to many areas of the County that were not covered by the older radio system. This provides the necessary protection and safety for bus drivers and other staff that depend on reliable communications, improves customer service to County citizens and other County agencies, and reduces reliance on commercial wireless networks in addition to future cost avoidance and other non-quantifiable benefits.

The new system is fully compatible with the mobile and portable radios used by the County's public safety radio system, which allows for direct communication between public safety and public service users for incident or disaster management, and provides a separate back-up system for the Public Safety system should that system fail. The County realized cost avoidance of over $3 million by using the public service system to serve as the back up to the public safety system, rather than modifying the public safety system.

## IT0058 Remote Access

### Project Description

This project supports enhanced and expanded capability of internal users to access the County's systems form remote locations for service field activities, telework, and possible pandemic outbreak access. To accomplish this, the telecommunications infrastructure must be flexible in its modes of access, while maintaining a stable and secure communication environment.

### Project Goals

An enterprise-wide standardized remote access control methodology provides a solution for employees and external system users, and also is intended to be expanded to partners and County customers and residents to authenticate their identity in order to gain access to relevant data and do business in a secure manner. 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

Required software licenses were obtained and project activity is on-going. Expanded remote access capabilities prepare the County for continuity of operations in case of catastrophic events such as pandemic flu, weather related disasters, etc.

### Project Budget

No funding is available for FY 2011.

### 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.

## IT0060 Telecommunication Modernization

### Project Description

This project continues the implementation of Fairfax County's strategic goal for providing Voice over IP (VoIP) services over the County's fiber optic network – I-Net. This strategy includes a solution architecture that is scalable to support a variety of County sites and agency business requirements using IP-based telephone service. An IP based solution means medium and smaller sized sites can be economically brought into the common voice enterprise architecture. 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 is to move Fairfax County towards a long-term, flexible voice solution that will underwrite the use of Voice over Internet Protocol (VoIP). An IP enabled enterprise-class platform provides the County with the ability to adopt newer cost saving services such as Session Initiation Protocol (SIP) Trunking from the maturing IP telephony environment. The new architecture will yield a flexible yet stable infrastructure that will be the foundation for the eventual evolution to a true broadband network architecture.

The replacement of the current voice communications infrastructure is a multi-year project that when completed will touch approximately 13,000 telephones, fax machines, private lines and devices used by Fairfax employees. The installations will occur in phases which allows the employee community to adjust to the changes, and thereby ensure a smooth change of voice platforms.

### Progress to Date

Following the contract award in May 2006, Fairfax County and Avaya, Inc. launched an aggressive "Immediate Relief/Proof of Concept" implementation at 7 sites. These sites were chosen to eliminate the escalating degradation of service in some of the County's oldest equipment. To date the project is 80% complete with more than 10,000 telephone lines on the Avaya platform. In addition, the project has begun to bring the following solutions online:

- Remote access for controlling telephone functions and call routing

- Unified Communications – integration with Microsoft Office Communicator
- Telework / Mobility / COOP Solutions
- County owned conference bridge
- Quality monitoring and call recording

## FY 2011 Goals:

- Fourteen County Libraries
- Nine County Recreation Centers
- Four Large size locations (>50 telephones)
- Sixteen Medium and Small sized locations (<50 telephones)

## Project Budget

In FY 2011 $1.7 million is recommended to support continued implementation of the Voice Modernization Project. The funding is provided from the County's Cable Fund (105)

## Return on Investment

The 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 phone and changes to existing phone service. In addition, the new voice infrastructure will allow 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.

## 3.5 HUMAN SERVICES

### IT0011.9 Document Management and Imaging – Department of Family Services

#### 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's standard platform.

#### Project Goals

Goals of the project are: a) to provide a reliable and secure system for cataloging, archival and retrieval of sensitive Human Services documents for case management, and, b) improve response times for client inquires of case records. In addition, the project allows for the management and preservation 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. Also in FY 2007, requirements definition began for Children, Youth, and Families, for the integration of the Commonwealth's SPIDeR system, and for the replacement of a data feed to a key financial systems. In FY 2008 system design and initial development / configuration tasks were completed.

Phase I – Self-Sufficiency Document Management and Imaging:

- Development efforts complete – 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
- Complete user training and phased implementation at four sites – Summer 2010

Phase II – Children Youth and Families Document Management

- Finalized vendor statement of work for requirements analysis – Summer 2009
- Prepared project schedule – Fall/Winter 2009-Spring 2010
- Request cost proposals – summer 2010
- Design and development of system solution – Fall/ Winter 2010
- User Acceptance testing – Spring 2011
- Implementation – Summer/Fall 2011

#### Project Budget

Due to budget constraints funding is not available in FY 2011.

#### 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 error rates since much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents. With the increased availability of accurate, available closed records, the Fraud Unit will be able to more easily investigate cases that may result in increased reimbursement. Accurate, timely processing of services and records are necessary to insure reimbursement for provision of services.

## IT0011.10 Document Management and Imaging – Office of Children

### Project Description

This project provides for the Office of Children's (OFC) Electronic Records Management system. The transition to an electronic system will ensure that citizens receive the most efficient, highest quality of service across OFC program division, and that all legal mandates are satisfied regarding record archival and citizen and client privacy.

Phase III includes imaging the files in the Directors 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

In FY 2007, the project transitioned Community Education and Provider Services, and the Child Care Assistance and Referral program to document imaging technology. The second phase of this project includes the Head Start and School Age Child Care program. Head Start maintains files for over 500 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 14,000 children in 134 centers throughout the county. Files are maintained on all staff, children and centers.

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. Currently work continues towards upgrading to the new version of the software for existing modules.

### Project Budget

No additional funding is provided in FY 2011.

### Return on Investment

Imaging and workflow project 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.

## IT0054 CSB – SYNAPS, HIPAA Database Consolidation, and SYANPS Replacement

### 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.

Replacement of the existing SYNAPS system 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 serving Fairfax County. FY 2011 funding provides for the initial requirements analysis for the replacement of the entire system.

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 FY 2011 project goals include initial requirements for the replacement of the existing SYNAPS system including technology capable of supporting service and business practices and facilitating access to electronic information. 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 efforts have included bringing the database and supporting application servers into current technology. Roll-out of new hardware has been base lined as an incremental just-in-time rollout so that hardware and licensing come on-line as CSB staff are trained and join usage of the system. Requirements for both the CSB HIPAA Database Consolidation and the SYNAPS replacement project will begin in FY 2011.

### Project Budget

FY 2011 funding of $175,000 is recommended in support of the CSB HIPAA Data Consolidation effort and requirements gathering for the SYNAPS replacement project.

### Return on Investment

The enhanced system provides greater system reliability and end user satisfaction and produces a more reliable and less labor-intensive application. The eventual replacement of the existing SYNAPS system will improve coordination and collaboration of services and supports, with consistent practice models and strategies and cooperation across systems and among mental health providers, to ensure the appropriate and timely exchange of information and the coordination of effective services and supports. The goal is to ensure that all stakeholders have the information necessary to support both person/family-centered and systems-level informed decision-making. The CSB HIPAA Data Consolidation provides appropriate role based security and scalability to enable multiple departments to store HIPPA-related information on a consolidated and secure platform.

## IT0059 Child Care Technology – Office for Children

### Project Description

The Child Care Management system for the Office for Children (OFC) in the Department of Family Services determines client eligibility, tracks child enrollments, and processes approximately $3 million per month in provider payments for the Child Care Assistance Program. This application processes over 2,500 home child care facility permits for 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 providers and interfaces with FAMIS the county's current financial management system.

### Project Goals

This project brings OFC technology in compliance with the County's IT standards and requirements. Providers and centers will have access to their data via the web and the ability to maintain their profiles reducing the need for OFC staff to maintain data. OFC depends on this database to issue permits and support the Child Care

Assistance and Referral program, which includes the online search for child care on the public web. The goal of this project is to provide up-to-date, secure technoloy and offer e-government services to family day care providers and centers.

### Progress to Date

Design and environment configuration and acceptance testing are complete; move to production is planned for early in FY 2011.

### Project Budget

Funding is not available in FY 2011.

### Return on Investment

E-government services will give providers and centers the ability to access data and maintain their profiles, reducing the need for OFC staff to maintain data. This system supports the Office for Children's permitting of family care providers and the Child Care Assistance and Referral program. The system enables permitting and the processing of over $3 millilon monthly payments to providers and centers. Upgrades avoid future cost associated with a non supported system. E-government services support the county's IT strategic plan.

## IT0084 Department of Family Services (DFS) – Data Reporting Project

### 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 major four 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 Department of Family Services (DFS) systems. This project will enhance security and efficiency within DFS by providing standardized, consistent, clean and integrated data sourced from 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

Project work will commence in FY 2011

### Project Budget

FY 2011 funding of $100,000 is provided.

### Return on Investment

A data warehouse will house 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 would 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.

## IT0085 Loan Processing System Replacement

### Project Description

The Fairfax County Department of Housing and Community Development (HCD) provides loan assistance to resident homeowners under a number of County and Federally sponsored programs. These loan programs are available to assist low-to-middle income residents in securing and maintaining affordable housing.

### Project Goals

This project's goal is to replace HCD's twenty three-years old Loan Processing System with a COTS program that facilitates current loan processing and tracking need, as well as retains Mainframe connectivity and connectivity to the Department of Finance functionally. 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.

### Progress to Date

A request for Proposal was issued in the spring of 2009 and contract award is anticipated by the end of FY 2010.

### Project Budget

FY 2011 funding is not required.

### Return on Investment

To address current shortcomings of the Loan Processing System, the County would need to invest substantial amount of time at an estimated cost of $300,000 and $500,000 in programming fees and discontinue its plan to phase out the inefficient IDMS and its associated maintenance costs. Procuring and implementing a loan servicing system that utilizes web technology is needed to properly account, service and report on the excess of $46 million in loans in the HCD portfolio, many of which are not captured in LPS. It also allows for enhanced revenues through the use of database matches (e.g., the Clerk of the Court, DPZ, etc.) which can enable HCD to independently determine if the conditions for loan repayment have become due. Given the large dollar amounts in our Proffer and various deferred loan programs the opportunities to enhance revenues or deter the loss of funds justify the need for this new system.

## 3.6 PLANNING AND DEVELOPMENT

### IT0055 Fairfax Inspection Database Online (FIDO)

#### Project Description

The FIDO Project involved 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 at five County agencies (Public Works, Planning and Zoning, Fire and Rescue, Health, and the Code Enforcement Strike Team). FIDO supports ninety different permits (building, roof, basement, restaurants, Sign, sprinkler systems, fire alarms, etc.) land use complaint types (residential overcrowding, tall grass, junked cars, etc.), and also includes a web portal to allow citizens and businesses to query the status of a permit applications and code enforcement complaints.

#### Project Goals

The goal of the FIDO Project was to provide a single database solution that met the needs of multiple agencies involved in similar processes. FIDO was integrated with several other County systems (Land Development System, Integrated Assessment System, and Master Address Repository System, GIS) to provide a seamless process throughout the lifecycle of construction projects, and code enforcement management activities. Project goals also included enhancing customer service by streamlining the permitting process, and reducing permit issuance, plan review and inspection timeframes.

#### Progress to Date

All relevant FIDO modules (Permits, Code Enforcement, License, Customer Service, and Cashiering) are in production for DPWES, DPZ, FRD, the Health Department and Code Enforcement. Other agencies such as the Department of Housing and Community Development, and the County Attorney also access FIDO on an as needed basis.

In FY 2009, the project team completed implementation of an enhanced Code Enforcement module that transformed code enforcement activities from an agency-centric module to an address-based case management module that aggregates all agency activity for a specific address in a single case. Work also continued on the development of a mobile wireless building inspection system for DPWES that will interface with FIDO. In addition, a mobile wireless FIDO pilot was launched in the Department of Planning and Zoning in February 2009 that involves the extension of the FIDO desktop to the field for up to 10 DPZ code enforcement inspectors. The pilot provides direct access to FIDO from the field through a laptop and virtual private network that allows the Inspector to interact with FIDO from the field.

Roll out of the FIDO wireless laptops to all DPZ code enforcement staff was completed in FY 2010. The Fire and Rescue Department and Health Department will use wireless laptops to extend desktop FIDO functionality to the field via VPN and commercial wireless networks. Project staff is working to complete roll out of the wireless laptops to all Health Department and Fire and Rescue Department Code Enforcement inspectors in FY 2010.

Remaining project tasks include implementation of web based permit and license applications, the addition of problem codes to the Dynamic Portal Complaints web site, the migration of data from the mainframe to a FIDO data repository, and providing email notification capabilities to customers.

#### Project Budget

FY 2011 funding is not available.

#### Return on Investment

FIDO consolidated land use data from several disparate systems into a single land use data repository that has transformed multiple agencies heterogeneous business processes to a homogeneous presentation layer that provides accessible business intelligence to key decision makers and customers. This data repository has led to a collaborative land use management business architecture that minimizes extended 3rd party reviews and information shortfalls that have historically prolonged permit issuance and code enforcement lifecycles. Data centralization has also maximized employee productivity by providing a single point of reference that has eliminated the need for phone calls and manual processes to determine the status of permit issuance pre-requisites (i.e, Site plan, code enforcement violations, contractor licenses, etc.).

System consolidation efforts included the elimination of redundant technical infrastructure and software maintenance expenditures that will ensure system efficiencies and cost savings throughout the FIDO system lifecycle. In addition, savings are realized through a

streamlined system that has enabled the land development industry to work more productively with the County thereby providing growth opportunities for County residents and businesses, that can potentially enhance tax revenues Moreover, the e-government capabilities and collaborative agency approach to code enforcement activities provided by FIDO has established an electronic dialogue between the County and citizens to monitor and/or eliminate conditions that may negatively impact quality of life issues in Fairfax County neighborhoods.

## IT0065 Facility Maintenance Management System

### 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 Maintenance 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.

### Progress to Date

Portfolio and Demand Maintenance – was implemented in March 2007. Implementation of Planned Maintenance, Inventory bar-coding, space management and configuration of handhelds was complete in June 2009; Real Estate Leases module – August 2009, and Capital Projects phase in December 2009. Last phases of the Capital and Facility Projects module will be complete in FY 2010. Work on the deployment of wireless server and deployment of the remaining Windows Mobile Devices, including licenses, hand held units, acceptance testing and training to facilitate field staff access to asset data, inventories, operational information, as well as improved data collection and warranty tracking will continue into FY 2011.

### Project Budget

FY 2011 funding of $665,550 is provided for project completion.

### Return on Investment

Extensive saving 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 bar-coding and wireless technology to greatly improve the speed and consistency of data collection necessary to better utilize field staff and eliminate 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.

## IT0082 Land Use Information Accessibility Initiatives

### Project Description

During January 2006, the Board of Supervisors established the Land Use Information Accessibility Advisory Group ("Advisory Group"). The purpose of the Advisory Group was to review the ways in which land planning and development information is made available to the public, make recommendations for accessibility improvements, and develop a high-level plan of action. The Advisory Group made a number of recommendations which were accepted by the Board of Supervisors in January 2007. See http://www.fairfaxcounty.gov/landusecomm/ for the final Advisory Group report.

### Project Goals

Project goals are to improve the ability of citizen and business constituent to easily access information concerning land use planning and development activities in their communities.

### Progress to Date

Due to on-going budget constraints an incremental approach has been taken to address the Group's recommendations.

During FY 2007 LDSNET web page enhancements provided two new inquiries; the Search Land Use Information by Address, and the Search Land Use Information by Magisterial District. Both functions also supported searching by, and accessing spatial views of land development information on a map.

During FY 2008 – FY 2009 staff addressed several Advisory Group recommendations including:

- Improving navigation between the LDSNET & GIS My Neighborhood web pages for common data elements,
- Expanding the Search by Address/Search by Magisterial District features to incorporate building permits and additional Plan types/Plan history,
- Expanding the LDSNET web page to include Site and Rezoning plan summaries in downloaded PDF files,
- Documenting requirements for citizen email notification of Site/Rezoning plan submissions, and 3D imagery tool integration for the My Neighborhood web page.
- My Neighborhood web page integration to streamline end user navigation.

During FY 2010, work continued with a pilot application that integrated web-based GIS 3-D imagery and GIS capabilities with existing land use systems such as IAS (tax assessment), LDS (Commercial and Residential development plans), and FIDO (building permit issuance). The pilot application has thousands of 3-D buildings in the Tyson's and Reston/Herndon areas. With a single mouse click it is now possible to have a 3-D aerial tours of the County's business centers, historic sites, schools, parks – along with easy address-based searches/queries of construction sites and building permit issuance activities. Users can also view their own 3-D models within the application and conduct shadow analyses of 3-D objects. The pilot application (Virtual Fairfax) is in a testing phase and will be released to the general public during FY 2011. On-going efforts to address the Advisory Group's recommendations to meet government transparency objectives will continue in FY 2011 (subject to funding priorities.)

### Project Budget

FY 2011 funding is not available.

### Return on Investment

The project streamlines constituent access to relevant land use information, enhances navigation and provides 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.

## IT0087 ParkNet Security Upgrade

### Project Description

The project is an IT hardware and software integration project to upgrade and bring ParkNet, Fairfax County Park Authority's aging business application into compliance with Payment Card Industry Standards (PCI) and replace aging hardware and operating system platforms with a County-compliant, Windows-based hardware and operating system platform to serve the Park Authority and its citizen-customers.

### Project Goal

The project goal is the replacement of the ParkNet hardware and operating system platforms with a County-compliant, Windows-based hardware and operating system platform to serve the Park Authority and its citizen-customers. This initiative ensures conformity with current supportable IT architecture and security standards as well as compliance with the Payment Card Industry mandates for accepting credit card payments over the internet and IVR.

Project objectives include: securing the Parknet application from the threat of virus infection by using County-standard tools for anti-virus protection; securing the ParkNet application from threat of environmental mishap and promote Continuity of Operations Planning (COOP) by relocating it from the Herrity Building to the Enterprise Operations Center; increasing availability to staff and citizens, placing the administration of the ParkNet platform under the auspices and standards of the agency's organizational unit; providing a faster application for agency staff (which benefits county citizen-customers); and eliminating the need for special DEC Alpha Cluster and Open VMS skill for Automation Services Branch staff.

### Progress to Date

Completion of software integration, installation ad testing is planned for the summer of 2010. The project will use existing County infrastructure resources for implementation.

### Project Budget

FY 2011 funding is not required.

### Return on Investment

The ParkNet system is critical to a range of agency core functions including recreation center and golf course point of sale activities to program and camp registration via the internet and IVR portal, architecture and security standards, as well as compliance with Payment Card Industry mandates for accepting credit card payments over the internet and on the IVR. Opportunities exist for enhanced revenue because of increased uptime and availability of the ParkNet system and the Internet class registration capability. The project protects the application, agency information, and citizen information by moving the server the County's Enterprise Operations Center (EOC), and promotes Continuity of Operations Planning (COOP) by involving County staff and resources in the protection of the data.

# Section 4

## MANAGEMENT CONTROLS AND PROCESSES

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## 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 utility provisioning, licensing and standards compliance. All departments must adhere to County IT standards, planning and budgeting and continue to follow the direction set by the County to ensure consistency, cost efficiencies and aggregate technology investment value.

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

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

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

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

- Centralization of the major IT functions for the County (FY 1995)
- Creation of a CIO function (FY 1995)
- Standardization of technology investments across the County (FY 1995)
- Annual technology project review incorporated in the County-wide 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: ITPAC (Information Technology Policy Advisory Committee) (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)
- Strengthening and reorganization of IT Security leadership an capability (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, and creation of a position dedicated to integrated Public Safety and Emergency Management strategy (FY 2005)
- Re-designated CIO position as Deputy County Executive (DCE for Information Departments and Compliance, and, designated Director of DIT as Chief Technology Officer (FY 2006)
- Established E-Gov Executive Committee (FY 2007)
- Created Customer Service function for enhanced Help Desk end-user tech commodity devices in DIT (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 (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 (FY 2008)
- Established Leadership for National Capital Region Interoperability Initiative (FY 2007)
- FOCUS Project (County and Schools) Steering Committee (FY 2008)
- Develop Technology Strategy Map (FY 2009)

### Executive Governance

The overall governance structure is laid out in Section 1 of this Plan. The Deputy County Executive for Information and Compliance (DCE-I) 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-related departments, 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.

The Director of the Department of Technology is also the County's Chief Technology Officer (CTO). The CTO develops strategy, policy and processes for technology county-wide. The CTO creates the agenda for IT and communications technologies, and directs the activities in the Department of Information Technology.

The Senior IT Steering Committee is the County's executive technology oversight body, providing policy, asset and resource authorization and guidance for the County's IT program. This group includes the County Executive, Deputy County Executives, Director of the

Department of Information Technology/CTO, Director of the Department of Purchasing and Supply Management and Director of the Department of Management and Budget. 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 monthly 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 Information Technology Policy Advisory Committee (ITPAC) is a group of citizen technology savvy leaders appointed by the Board of Supervisors to advise the DCE and CTO on strategy, the industry, and best practices. The annual ITPAC agendas provides information about both existing portfolio initiatives as well as planned initiative and opportunities, most of which require IT investment support in either upcoming or future budget planning cycles. ITPAC writes an annual letter to the Board of Supervisors with its recommendations and advice on technology priorities as part of the annual County budget process. Members also advise their respective Board members on critical matters.

The e-Government Steering Committee provides guidance and direction for new capabilities provided via the Web and other public access cannels. The DCE is the chair of the committee, which includes the CTO, E-Government Manger, Directors of the Department of Cable and Consumer 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 and FOCUS project have governance boards 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 the Department of Information Technology (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.

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 manger 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 issue. 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 project managers through a project management certification course developed by DIT, which certifies business agency staff to lead projects at different dollar thresholds. Once certified and assigned to an approved project, the project manager's compensation may be adjusted to reflect enhanced organizational contribution. The certification focuses on project reporting and administration, contract negotiation and management, technical architecture, business process redesign, task planning and other topics. Certification is also required for technical project managers. DIT assigns a Technical Project Manager that works with the agency Project Manager to 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 contract negotiations.

In addition to the Project Steering Committee, 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 and technical guidance from the PMO function in DIT.

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 three 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
- IT Investment Portfolio Management
- System Development Life Cycle Standards; and
- 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 DIT's posture for success. 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' interaction, the need for business integration and interoperability for cross-cutting County initiatives, fast adoption of e-government opportunities, industry and economic trends, and similar imperatives. The strategic thinking and planning process provides a framework to make decisions around alignment of IT resources to meet the needs of County government. The Strategic Plan provides the County forethought for long term technology commitments and allocation of limited resources to achieve business objectives. This process is necessary to

keep and update technology, analyze appropriateness of technology refresh cycles, and the effectiveness and sustainability of technology investments.

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, mob 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. **Customer 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 and developing a balanced score card approach. Key elements of the updated plan will include more focus on the strategic direction of the agencies served, and how agency strategies will necessitate changes in DIT's future infrastructure plans and the development of DIT 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 overwhelm the capabilities of the IT infrastructure. Disparate decisions and infrastructure investments can easily create a complex and 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 resistant to change. 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" everything that inhibits change, while "engineering in" a high tolerance for the unanticipated. 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

To steward this process, a Strategic Architecture Committee composed of DIT and technical and /or business representatives of County departments was formalized. Committee members selected have knowledge of contemporary information technology (IT) direction and the role IT plays in the vision or mission of their agency. The purpose of the Architecture Committee is to address information technology (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 Committee 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 DIT and other County 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 Countywide implementation.

In FY 2005, a new organizational team was created within DIT to provide oversight of all County architecture and infrastructure standards, policies, and directions. The responsibilities of the **Architecture Review Board** include application development architecture, infrastructure and information architectures, security architecture, emerging technology, process and data modeling, integration and interoperability methodologies, technical standards, and 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 county-wide goals.

## 4.4 System Development Life Cycle Standards (SDLCS)

The County published standards for documenting the development and implementation of applications. The standards included written means of conveying information about the planned application, to allow for controls, performance, data integrity, appropriate infrastructure and operational procedures required to place the application into production.

The Systems Development Life Cycle Standards 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 required. The SDLC standards were enhanced in 2007 to include updates and additional components. As part of the document update, the SDLC includes new WEB development, wireless and interoperability standards, updated security standards, reviews for e-government and GIS, and requirements for Continuity of Operations (COOP) plan and related disaster recovery information as a requirement for deployment of any new system. As an example, web applications must conform to Section 508 and 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 technologies that will further enhance citizen to government engagement, decision support, and transparency.

The SDLCS and architecture standards apply to all applications developed for use by Fairfax County Government. All staff and contractors 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 additional, the Fairfax County Internal Auditors may review randomly selected projects.

### Description of the Standards and Process

The Systems Development Life Cycle Standards 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. Each year, staff will review and refine the SDLCS 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

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 early 1997, the Department of information Technology (DIT) reviewed other organizations' 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 focus has been placed on managing risks, IT security, organizational change management, and business process redesign.

The new and improved training program consists of ninety-six (96) hours (12days) 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 an efficiently mange IT projects.

The core content areas covered are:

- IT Project management Fundamental
- Project Leadership and Communication
- IT Project Plan Development
- Microsoft Project
- 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. An IT Project Manager specification (position series) is also included within the County's personnel classification system.

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 manger 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.

# 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 strategic 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

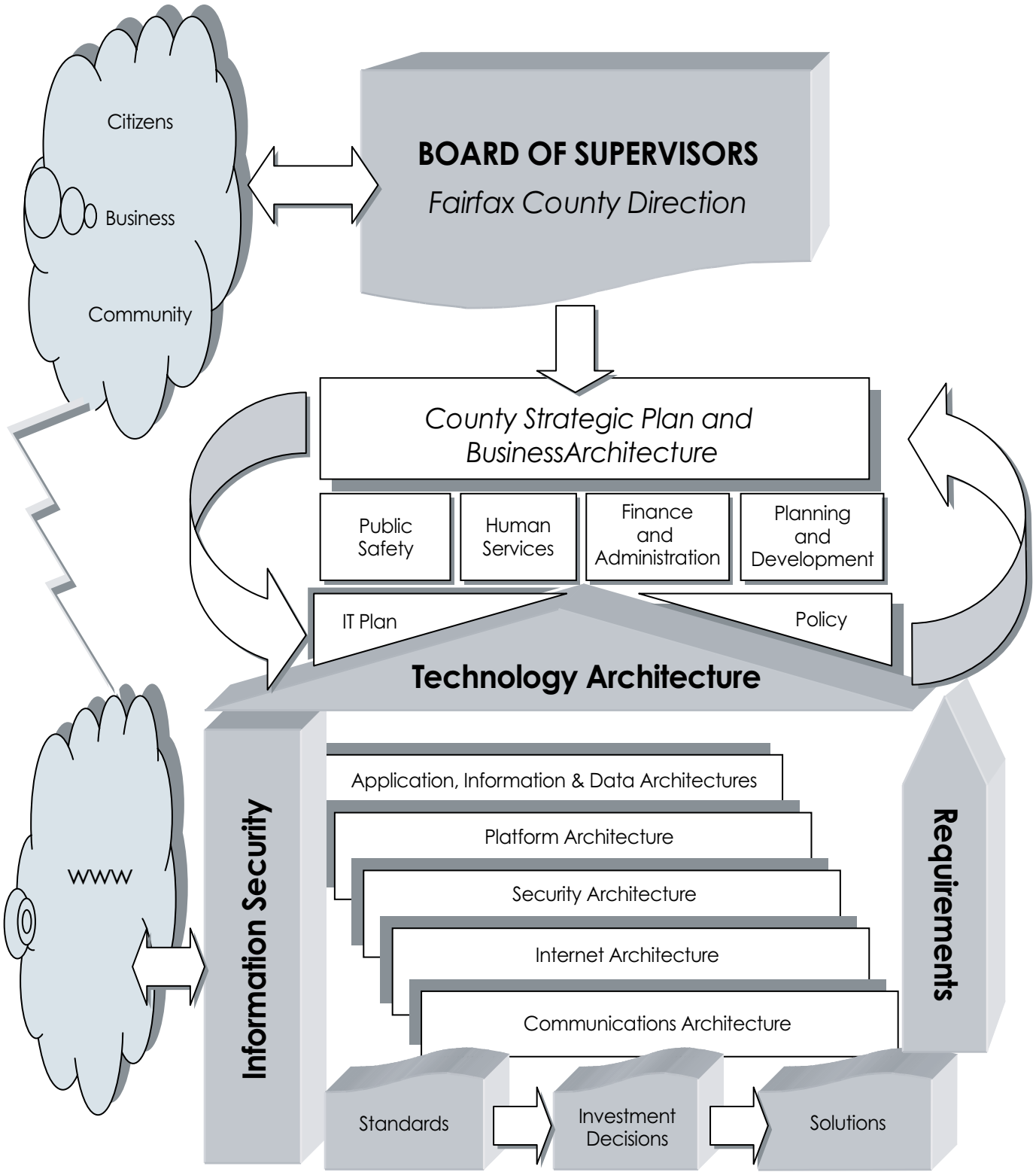
#### IT Architecture Process Model

Fairfax County adopted 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 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."


Citizens
Business
Community
BOARD OF SUPERVISORS
Fairfax County Direction
County Strategic Plan and BusinessArchitecture
Public Safety
Human Services
Finance and Administration
Planning and Development
IT Plan
Policy
Technology Architecture
WWW
Information Security
Application, Information & Data Architectures
Platform Architecture
Security Architecture
Internet Architecture
Communications Architecture
Requirements
Standards
Investment Decisions
Solutions

## 5.2 Application and Data Architecture

Application architecture defines the design and correlation 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, and/pr desktop computer platforms. New applications and application enhancements are constantly evaluated, developed or acquired, and implemented as older "legacy" applications retire, or, business organizations and related functions reorganize and/or have new needs.

A major component of mainframe based legacy applications will be replaced in the next 36 months, thus mainframe environment will retire sometime after the ERP transformation and the remaining legacy applications have been replaced or re-developed. Fairfax County is updating many of its administrative applications as well as acquiring new applications. County government and school system have embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support financial management, materials management, 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 (See section 2). The common solution SAP ERP uses contemporary application architecture, and will be the application platform for other applicable system replacements, also providing interoperability, data mining, and integration with WEB architecture for improved on-demand search.

The County's goal is to use industry standard application development tools and language environments that are adaptive in web-enable models. The Application architecture also protects the County's investment in 'classic' systems by enabling enhancements that facilitate 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 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 between Commercial-Off-The-Shelf (COTS) vs. in-house development for the diverse portfolio of agencies' business systems, the new framework for application development is applied. The new framework incorporates Software Engineering, Information Architecture, and Application Development Methodology. These principles and techniques are used to augment the current Systems Development Life Cycle Standards (SDLCS). 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 is 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. A new class of tools such as Visual Studio.Net provides 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, the state, the 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 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 facilitate work planning and communications.

**Programming/Development Tools –** New applications are currently under development using fourth generation object oriented languages and tools. This approach will continue 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. E 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 assist in 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 available that meet agencies' unique 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 include 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 in the Group Decision Support Center. Groups use the computer-supported meeting center and its 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. The majority of small agency applications use Microsoft Access or Microsoft SQL Server as the database and programming language architecture. Remaining mainframe based legacy applications use DB2, IDMS, and /or VSAM databases.

**Enterprise Decision Support Systems and Business Intelligence –** The County's portfolio currently contains a number of products used for reporting, analytic, and decision support. Business Objects/ Crystal Reports, SAS, QMF, SQL Reporting Services are the current tools supported 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. 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 will enable 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, and Outlook. Microsoft Internet Explorer is the standard for Web browsing, implemented in the standard image. Microsoft Project and Visio are available through enterprise software provisioning. 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 is the web-based solution used to support the Service Desk function leveraging the ITIL framework. The Automatic Call Distribution telephone 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, the operating systems and interfaces supported, as well as other software tools and equipment used to operate applications. Fairfax County's platform architecture includes over 700 servers: UNIX (Sun Solaris and Unisys ES), Microsoft Windows 2003/2008, and z/OS mainframe Over 12,000 PC's provide end-user access to County systems. Laptops, Blackberries and other PDAs and mobile devices also support employee access to agency business systems. All personal computers are standardized using Windows XP /Vista and/or 2007. The total data storage requirement has grown from 394 gigabytes in 1998 to the current total of over 400 terabytes. The County also uses State and other non-County hardware platforms as necessary. The following paragraphs describe the major features of the County's platform architecture.

### 5.3.1 The Platforms

**Desktop PCs, workstations and Peripherals –** DIT prescribes hardware platforms and desktop applications standards as well as procurement vehicles to optimize support and cost. Desktop computers (PCs) are replaced in accordance with the County's PC Replacement Program cycle using adopted standards bundled with the MS 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 groupware, application client software, Internet/Web access, and mainframe emulation. Windows 7 and Windows Mobile are currently being deployed.

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

**LAN-based Network Servers –** Fairfax County's enterprise server environment utilizes Intel and Unix-based servers. Enterprise-class server technology (e.g. UniSys ES 7000, DELL/IBM Blade, SUN servers) support the County's enterprise infrastructure applications such as Exchange, Active Directory, SQL, Oracle, Citrix, and major business systems such as GIS, Tax systems, Human Services systems, Land Development and Public Works applications, Library, and Corporate systems. etc. The County supports virtualization as a standard platform for compliant COTS and infrastructure applications where feasible.

### 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 allows users to deploy storage in a variety of centralized and distributed environments with re-deployment capabilities as needed.
- Highly available architectures to prevent downtime.
- Cross-platform solutions that support a variety of operating systems, allowing users to reduce costs by standardizing on a single enterprise storage solution, rather than operating system specific solutions.
- Higher levels of performance to support the ever-growing volume of online data.
- Higher performance backup and restore operations 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 in 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 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 takes 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 will ultimately 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 for keeping network architecture and standards in line with evolving business requirements, security and other support needs. Web-enabled applications and Internet tools such as Social Media have rapidly expanded; this coupled with business continuity resulted in expansion from a single high capacity DS-3 for internet services to two DS-3's and one 50-100MBPS MAN circuit connected to two separate ISPs. 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.

*Fairfax County's Enterprise Technology Operations Center*

### 5.4.1 Enterprise Data Communications Network

The Enterprise Data Communications Network for Fairfax County Government serves as the data communications backbone that provides countywide access to information technology resources. All systems connected on the enterprise network are based on 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 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. On-going strategy integrated the wireless and wire-line networks.

The Enterprise Wide Area Network (WAN) is built of two different architectures. One: I-Net or Institutional Network utilizing the dark fiber provided to the County through the COX and Comcast Cable Franchise Agreements. 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 180+ 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. 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 via Verizon ATM and TLS services. ISDN and DSL are in place for small sits such as group homes and small park sites. Use of the ISDN technology is being phased out in favor of I-Net, ATM, of DSL.

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 infrastructure and using logical separation on the WAN. 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 will continue to implement wireless LANs and wireless data over commercial systems as necessitated 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 currently 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 Mobile Data Network

To support operations of the various public safety agencies, the County activated AT&T Commercial Wireless Broadband service integrated with a legacy 450NHZ mobile data communications system (MDCS) that ties the response vehicles of the Police, Fire and Rescue and Sheriff's departments to the County's Computer-Aided Dispatch (CAD) system, the Law Enforcement Incident Management system mobiles, and access to various databases maintained by the Commonwealth of Virginia and Federal law enforcement databases. This system consists of more than 900 Mobile computers Terminals (MCT) and Vehicular Radio Modems (VRM) in vehicles of the various agencies, with transmitting equipment located at six sits in the County. The Fire Department uses Verizon Wireless commercial broadband service for Emergency Medical System access and communication, while 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.

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 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).

### 5.4.3 Institutional Network (I-Net)

The County's network backbone (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 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.

### 5.4.4 Voice Communications Network

In FY 2007, the County began deployment of a new telephone architecture using an Avaya enterprise-wide VoIP capable platform. Implementation of the new voice communications platform is ongoing and will be substantially completed in FY 2011. The solution uses the latest technology that includes VoIP and the County's fiber-optic network I-Net as the transport network connecting County facilities, thereby reducing the total costs of providing telecommunications services. The continued implementation of the new Avaya communications platform will help meet the needs of Fairfax County citizens and employees, and leverage the high-speed, high bandwidth connectivity provided by the County's I-Net to form a fully integrated broadband network. To complement the cost saving advantage of using the I-Net for calls between locations, DIT is developing a strategy to implement Session Initiation Protocol (SIP) Trunking to further reduce the cost of connecting 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 serve as the "core" for the Avaya enterprise platform. The streamlined dialing plan enables more efficient and less cost for agencies that have a geographically dispersed footprint with much tighter voice communications integration between locations. Avaya collaboration applications, such as the Call Center Elite application, allow agencies to have call center agents dispersed across the County, yet they are part of the same work group from a citizen facing standpoint.

The system architecture is also integrated with a new Call Management System (CMS) solution from Avaya as part of the Voice Modernization platform. This solution's capabilities greatly improves the collection of necessary statistics used by Contact Center managers to evaluate the County's responses 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 Public Service System was refreshed in 2005. Continuing in FY 2011, the Public Safety Radio system will be upgraded to a digital, IP based technology for improved data access, system management, improved integration with the new Computer Aided Dispatch system (Intergraph), and regional interoperability. The two system infrastructures are architected to allow interconnection and back-up.

The County will remain fully involved in the FCC mandated 800 MHz re-banding effort, managing the county's transition and the regional re-banding plan.

## 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. 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 Server –** The County InfoWeb Intranet Web server provides a portal access to County information and applications for agency and employee use.
- **Application Servers –** provide the gateway between the County Web servers and the information stored in County enterprise databases. The application servers communicate with various databases on the County servers, accessing and collecting the requested information, formatting the information, updating the database where appropriate, and returning the result to the Web server for presentation. Application severs also provide additional levels of security to ensure that only allowable information is accessible.
- **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 e-Government strategy. The security layer employs best practices security principles coupled with a hardware and software infrastructure supported with policies, plans and procedures. This 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 for overall reduction of risk. The objectives of the information security program are to ensure confidentiality of information, integrity of data, systems and operations, technical compliance for HIPAA and PCI, privacy and availability of information processing resources. The information security program utilizes a multi-faceted approach to meet these objectives that includes threat reduction techniques, technological and managerial solutions, and vigorous implementation of awareness activities. The basic elements of identification and authentication, access control and monitoring of information processing activities are employed throughout the enterprise. The secure network architecture is a defense-in-depth approach to network security design including a method of network partitioning and the development of a modular infrastructure are deployed to better shield important resources within the network.

"Safe" architecture is in place for IT Security, dividing the network perimeter into five business groups E-Commerce, Internet Access, Partners, Emergency Operations, and Public Access. Each group has its own physical firewall tailored for the specific business area. This strategy has increased firewall performance and limited 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.

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 uses broad filtering and routing at the firewall portion nearest to the Internet connectivity, while more granular filtering and routing is exercised nearest 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 as well as backend servers, the County has procured identity management platform that positions DIT to leverage the security architecture framework well into the future. e-Trust, through its SiteMider module, provides a software platform of shared services that includes reduced sign-on, authentication management (who are you), and entitlement management (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 to the protection of internal assets. With Identity Management in place, the County will be in a position to 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 internal and external users.

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, the need for a specialized application to support the role of correlation was 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 of the network while information and services available for public use are located on the public section. CITRIX, VPN, Web Access and dial-up technologies are available for remote users. Each of these requires security tokens and LDAP authentication for access. 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 Procurement Card Industry (PCI) have increased system monitoring and user enforcement requirements. IT security awareness activities are implemented to effect a culture change for all employees. Through security conscious employees, realization of return on investment in security technologies can be leveraged further as overall risk to data and systems is reduced.

Fairfax County Government is dedicated to protecting its IT assets and the data and information in its charge and ensuring that no unauthorized access or use of such data and information occurs. As evidence of its long standing and best practices approach and implementation of IT Security, Fairfax County Government received Cybertrust's Enterprise Security Certification in May 2010 which attests that Fairfax County Government has made security a priority, and employes renowned security processes and technologies in establishing and maintaining a proactive and comprehensive information security program. The recognition acknowledges that the county's information security controls, policies and procedures have been examined, measured and validated against a stringent set of security requirements. The Security Management Program (SMP) is a comprehensive security assessment and certification program that validates an organization's security posture. 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.

Verizon Cybertrust Security | CERTIFIED ENTERPRISE

# Standards

# STANDARDS

## FEATURED IN THIS SECTION:
## Fairfax County Information Technology Standards

# FAIRFAX COUNTY
# INFORMATION TECHNOLOGY STANDARDS

## OVERVIEW

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 product or 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 (retiring 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 indicates DIT's strongest recommendation for selection of the listed 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 May 2010

## PLATFORM ARCHITECTURE STANDARDS: END USER SOFTWARE

| Component | Current Standards |
|---|---|
| Operating System | Windows Vista/Windows7 |
| Word Processor | Microsoft Word 2007/2010 |
| Spreadsheets | Microsoft Excel 2007/2010 |
| Presentations | Microsoft PowerPoint 2007/2010 |
| Database | Microsoft Access 2007/2010 |
| E-Mail Client | Microsoft Outlook 2007/2010 Outlook Web Access (latest release) |
| Project Management | Microsoft Project Professional 2007/2010 |
| Graphics | Microsoft Visio Professional 2007/2010 |
| Web Browser | Microsoft Internet Explorer -IE7/IE8 |
| Antivirus | Symantec AntiVirus (latest release) for Workstations and Servers |
| Patch Management | Microsoft System Center Configuration Manager (SCCM) 2007<br>Windows Server Update Services (WSUS) |
| Mainframe Terminal Emulation | Blue Zone |
| Thin Client Access | Citrix Xenapp 6.0 |
| Other | Must be approved for Business Unit standard image/requirements |

## PLATFORM ARCHITECTURE STANDARDS:
## END USER HARDWARE

| Component | Desktops | Laptops |
|---|---|---|
| Power | Single | Single |
| CPU | Intel Core 2 Duo Processor 800GHz FSB | Intel Core 2 Duo T7500 (2.20GHz, 4MB L2 Cache) |
| Disk Configuration | 160 GB , SATA drive | 80 GB, 7200 RPM Hard Drive |
| Media Drive | 16X DVD R/W combo drive | 8X DVD CD-R/W combo drive |
| Memory | 4 GB, Non-ECC SDRAM, 4 DIMMS | 4 GB RAM<br>(2 DIMMS) |
| Monitor | 19" SVGA, Ultra Sharp, Flat Panel, DVI/ VGA | Wide Screen WXGA+ LCD Panel |
| Video Card | Dedicated 256MB ATI Radeon, dual monitor capable DVI | dedicated 128 MB NVidia |
| Interface Card(S) | Ethernet 10/100/<br>1000 Base- T | Built-in Ethernet card |
| Operating System | Windows Vista/Windows 7 | Windows Vista/Windows 7 |
| File System | NTFS | NTFS |
| Maintenance | 5 Year on-site, next business day | 5 Year on-site, next business day |
| Additional Hardware Requirements | Sound bar | Port replicator, external mouse, keyboard and monitor if used as desktop.<br>Security Lock |
| Platform | Dell | Dell |

## PLATFORM ARCHITECTURE STANDARDS: HAND HELD MOBILE DEVICES

| Component | Current Standards |
|---|---|
| Platform | RIMM/Blackberry<br>Syclo<br>*Blackberry Enterprise Server* |
| Software Compatibility | Outlook Exchange (Downloadable), Active Sync, Date Book, Address Book, To do List, Memo Pad, Calculator |
| Connectivity | TCP/IP Internet or USB enabled |

## PLATFORM ARCHITECTURE STANDARDS:
## GENERAL SERVER STANDARDS

| Component | Current Standards |
|---|---|
| Procurement | Servers are procured by DIT as warranted by many factors, including current utilization of existing infrastructure, the 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.<br>Agency Project Managers work with DIT to develop a technical task plan and budget estimate for the project's hardware, software, middleware, peripherals, storage, maintenance, and connectivity. DIT will assess the requirements in light of the current environment (and other factors) to confirm which components must be purchased, and which will be paid for through DIT funding. |
| Operating System | Microsoft Windows Server 2008 R2 Standard Edition<br>Microsoft Windows Server 2008 Enterprise Server (clustering or servers with 4 processors or more);<br>Solaris (latest release)<br>*z/OS 1.4* |
| Thin Client Access | *Citrix Xenapp 6.0* |
| Hardware | Intel (Windows)<br>SPARC(UNIX)<br>IBM Z-Series (Mainframe) |
| Backup | Symantec Net Back Up<br>Storage Thin Provisioning<br>z/OS DFSMS |
| Storage | SAN/NAS |
| E-Mail | Microsoft Exchange Server 2003 Enterprise Edition/Microsoft Exchange S erver 2010<br>*L-So ft LISTSERV* |
| Web/Application Servers | Preferred: Microsoft Internet Information Server – IIS7<br>Apache Web server (if required by COTS package)<br>Tomcat (if required by COTS package)<br>JBOSS<br>BEA Systems WebLogic<br>Microsoft BizTalk<br>Web Methods<br>*Oracle Application Server 10g* |
| Configuration/Change anagement | Infra Enterprise – ITIL Service Management |

## PLATFORM ARCHITECTURE STANDARDS: FILE / PRINT / WEB SERVERS

| Component | File/Print Services | Web Server (INTEL) | Web Server (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)<br>Database / Application Drives – Raid 5 utilizing SAN if EOC resident | Operating System Drives – Raid 1 (Mirrored)<br>Database / Application Drives – Raid 5 utilizing SAN if EOC resident | Operating System Drives – Raid 1 (Mirrored)<br>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 2003/2008 Server | Windows 2003 Server; Windows Server 2008 | Solaris (latest release) |
| Monitor | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack mountable Flat LCD monitor<br>Required if EOC resident |
| RAM | 4 GB<br>Minimum Cache 256MB | 4 GB<br>Minimum Cache – Database/Application specific | 4 GB<br>Minimum Cache – Database/ Application specific |
| File System | NTFS | NTFS | Solaris |
| Third Party Software Requirements | Symantec Antivirus, Enterprise Edition<br>MS SCCM Client | Symantec Antivirus, Enterprise Edition<br>eTrust SiteMinder Agent<br>MS SCCM Client | Symantec Antivirus, Enterprise Edition<br>eTrust SiteMinder Agent |
| Web Server Software | N/A | Internet Information Server IIS7<br>Tomcat (if required by COTS package)<br>BEA Systems WebLogic | Apache (if required by COTS package)<br>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<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM & Tape Drive (DDS-4) |
| Pre-Install Options | None | None | None |
| Storage And Backup | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) |

## PLATFORM ARCHITECTURE STANDARDS: DATABASE/ APPLICATION SERVERS

| Component | Database Servers (INTEL) | Database Servers (UNIX) | Application Servers (INTEL) | Application Servers (UNIX) |
|---|---|---|---|---|
| Power | Redundant, UPS required if not ETOC-resident | Redundant, UPS required if not ETOC -resident | Redundant, UPS required if not ETOC -resident | Redundant, UPS required if not ETOC-resident |
| Fault Tolerance / Disk Configura-tion | Operating System Drives – Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives – Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives – Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives – Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) |
| CPU | Quad 3.0 Mhz | Quad 1.5 Mhz | Quad 3.0 Mhz | Quad 1.5 Mhz |
| Network Interface Cards | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T |
| Operating System(s) | Windows 2003 /2008 Server<br>Windows 2003 /2008 Advanced Server (Clustering) | Solaris (latest release) | Windows 2003 Server Windows 2003 Advanced Server (Clustering); Windows Server 2008 | Solaris (latest release) |
| Monitor | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack Mountable LCD Flat monitor<br>Required if EOC resident | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack Mountable LCD Flat monitor<br>Required if EOC resident |
| RAM | 8.0 GB<br>Minimum Cache - Database/Application specific | 8.0 GB<br>Minimum Cache - Database/Application specific | 4.0 GB<br>Minimum Cache - Database/Application specific | 4.0 GB<br>Minimum Cache - Database/Application specific |
| File Systems | NTFS | Solaris | NTFS | Solaris |
| Third Party Software Require-ments | Symantec Antivirus, Enterprise Edition<br>MS SMS Client | Symantec Antivirus, Enterprise Edition | Symantec Antivirus, Enterprise Edition<br>MS SMS Client, SCCM Client | Symantec Antivirus, Enterprise Edition |
| Platform | DELL | SUN | DELL | SUN |
| Mainte-nance | 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 | 5 Year, 24/7, 4 hour on-site, parts & labor included |
| Additional Hardware Require-ments | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Internal Tape Drive for Root Volume Backup<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive (DDS-4) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Internal Tape Drive for Root Volume Backup<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive (DDS-4) |
| Storage And Backup | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) | Symantec NetBackup & Storage thin provisioning (i.e. snapshot) |

## APPLICATION ARCHITECTURE STANDARDS: APPLICATION DEVELOPMENT

| Component | Mainframe | UNIX | INTEL | Internet/Intranet | GIS |
|---|---|---|---|---|---|
| Database Software | N/A | Oracle 10g | SQL Server (latest release)<br>Oracle 10g | N/A | Oracle 10g<br>Oracle Spatial DB |
| Application Development Frameworks | N/A | Java | .NET Framework (latest release)<br>Java | .NET Framework (latest release)<br><br>Java | .NET Framework (latest release)<br>ESRI |
| Virtualization | LPARS | Zones/ Containers | VMWare | VMWare | Zones/ Containers |
| Software And Development Tools<br><br>(Report Writing Products Are Listed On Page 8.) | COBOL<br>CICS<br>TSO<br>JCL | N/A | Microsoft Visual Studio – Latest Release<br>Eclipse | Microsoft Visual Studio – Latest Release<br>Eclipse | ArcGIS 9.3 & Extensions<br>ERDAS 9.3<br>Arc Internet Map Server 9.3 / ArcGIS Server 9.3<br>ArcSDE 9.3<br>ArcPad 8<br>OnPoint 6.2<br><br>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<br>e-Trust SiteMinder | Active Directory<br>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<br>Jacada | webMethods | webMethods<br>MS BizTalk | webMethods<br>Jacada<br>MS BizTalk | N/A |
| Workstation Requirements | TN3270 Emulation<br>TCP/IP Connectivity | Oracle Client Suite<br>ODBC Drivers | Oracle Client Suite<br>ODBC Drivers<br>SQL Management Studio | MS Internet Explorer – IE7 | Terminal Server Client<br>Citrix Metaframe Client<br>Active X Plug-in<br>Active Directory Tools |

## PLATFORM ARCHITECTURE STANDARDS: ENTERPRISE SOLUTION PLATFORMS

| Platform | Current Standards |
|---|---|
| Report Writing:<br>Departmental Reporting Needs | Business Objects<br>Crystal Reports<br>Microsoft SQL Reporting<br>*Easytrieve Plus* |
| Statistical Analysis | SAS |
| Enterprise Reporting<br>Business Intelligence | N/A |
| 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 |
| IT Services Management | Infra Enterprise – ITIL Service Delivery |
| GIS | ArcGIS 9.3 & Extensions<br>ERDAS 9.3<br>Arc Internet Map Server 9.3 / ArcGIS Server 9.3<br>ArcSDE 9.3<br>ArcPad 8<br>OnPoint 6.2<br>Electronic Field Study 2.7 |
| Voice Communications | Avaya S8700s and G700s Servers |

## FAIRFAX COUNTY DATA COMMUNICATIONS STANDARDS

### NETWORK PROTOCOLS

TCP/IP – Network is pure IP environment.
BGP/OSPF – Routing protocols employed on County WAN/MAN.
MPLS/VRF – Architecture employed on County WAN/MAN.

### STRUCTURED CABLING STANDARDS

### ACCESS LAYER CABLING:

CAT-5E – used in existing facilities
CAT-6 – used in all new construction
CAT-6A – used in new construction with special high speed requirements
All voice and data cabling are terminated in same faceplate with color code inserts to identify function.

### BACKBONE CABLING:

Multi-mode optical fiber 62.5/125
Single mode fiber – use dependent on distance

### DATA NETWORK STANDARD EQUIPMENT

The Fairfax County Enterprise Network is standardized on Cisco networking platform. Below are the specific models of equipment deployed in the network. Platform families may be added or modified.

### ROUTING:

Cisco 2600/2800 – Access layer sites (Non I-Net)
Cisco 3800 – I-Net Access layer sites
Cisco 6500 MSFC – Campus Routing
Cisco Nexus 7010's, Nexus 5020's and 1000V – I-Net Core/Campus Routing

### SWITCHING:

Cisco 2950 – Wire Closet (small IDF) be phased out
Cisco 3560 – Wire Closet (small to medium IDF)
Cisco 4500 – Wire Closet (medium to large IDF)
Cisco Nexus 7010's, Nexus 5020's and 1000V – Core switching (MDF)

### DWDM SWITCHING:

Cisco ONS 11454 – I-Net Core

### WEB CONTENT /CACHING:

Ironport S660
DNS:
F5 Big IP 1500 GTM – Global Load Balancer/DNS

### CONTENT SWITCHING/LOAD BALANCING:

Netscaler 12000

### FIREWALL:

Cisco Firewall Services Module version 3.2(4) and 3.2(13)

# 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 |
|---|---|
| **IT0002 Human Services** | |
| 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. Completed 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. |

| Project Name and Number | Description |
|---|---|
| **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 (situs) addresses in Fairfax County. Project was substantially complete in FY 2008. |
| **IT0006 Tax and Revenue Modernization** | |
| 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. |
| **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 |
|---|---|
| **IT0015 Health Department Information Systems** | |
| 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. |
| **IT0025 Adult Detention Center Information System (SIMS)** | |
| 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. | |
| **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. | |

| Project Name and Number | Description |
|---|---|
| **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 (IT0079). | |
| **IT0047 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. | |
| **IT0048 Fire and Rescue Incident Reporting and Records Management** | |
| 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. |
| **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 | |
| **IT0055 Fairfax Inspections Database Online (FIDO)** | |
| 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. | |

| Project Name and Number | Description |
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| **IT0056 Courtroom Technologies – Pilot 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. Next phase of the project involves the installation and implementation of electronic way-finding for the three Fairfax County Courts. | |
| **IT0057 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** | |
| 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. | |
| **IT0060 IT Security Projects** | |
| 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 |
| **IT0062 Police Records Management Projects** | |
| 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. |
| ILEADS – Police Records Management Project | I/LEADS system went live in January 2010. The new police records management application I/LEADS will integrate with the Computer Aided Dispatch (CAD) system in the Department of Public Safety Communications, ensuring a unified technology platform approach that seamlessly shares processes and data across public safety functions and leverages available technologies. I/LEADS increases the Police Department's ability to prevent, respond to, manage, and analyze situations that threaten the safety and property of citizens. |

| Project Name and Number | Description |
|---|---|
| **IT0063 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** | |
| 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 complete in FY 2009. | |
| **IT0068 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** | |
| 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. | |
| **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. | |
| **IT0073 Integrated Parcel Life Cycle System (UDIS)** | |
| 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)** | |
| 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. | |

| Project Name and Number | Description |
|---|---|
| **IT0076 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. | |
| **IT0080 Juvenile and Domestic Relations Court (JDRC) Residential Services Intake System (RSIS)** | |
| 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. | |
| **IT0081 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. | |
| **IT0083 Public Safety Architecture Modernization – ICAD** | |
| 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. | |



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Prepared by the
Fairfax County Department of Information Technology
12000 Government Center Parkway, Suite 527
Fairfax, VA 22035
703-324-3380 TTY 711
http://www.fairfaxcounty.gov/dit