FAIRFAX COUNTY, VIRGINIA

DEPARTMENT OF INFORMATION TECHNOLOGY

Fairfax County VIRGINIA

FY 2007

INFORMATION TECHNOLOGY PLAN

FAIRFAX COUNTY INFORMATION TECHNOLOGY PLAN

FY 2007

PREPARED BY

The Department of Information Technology

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INTRODUCTION

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SECTION 1
INTRODUCTION

1.1 PLAN OVERVIEW

Like many governments that are faced with growth in demand for services in the face of new needs and a changing economy, the County is faced with major challenges and opportunities. These challenges and opportunities are caused by heightened expectations from the County's constituents, citizens and business community who need to interact and conduct business with the County utilizing modern automation capabilities combined with the need to leverage and enhance limited staff resources necessary to accomplish the work. This expectation occurs within an environment of rapid change and finite resources. To be successful, the County's Information Technology (IT) resource must be contemporary, flexible, and scalable and secure with the ability to respond to ever changing requirements. It builds on an enterprise architecture that supports the variety of needs while maintaining a supportable portfolio of systems and tools, and operates effectively and efficiently to ensure better services, better products, shorter project life cycles, less cost and more convenience.

To enable the Fairfax County technology program to meet this challenge, continued emphasis is placed on projects that conform to a strong and secure technical infrastructure foundation for all information systems applications and services, allow County government to communicate effectively internally within the county government organization and externally throughout the community, allowing appropriate and secure access to 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 the management of IT *(Section 1*); Initiatives and Strategic Directions (*Section 2*); current IT Programs and Planned Enhancements (*Section 3*); Management Controls and Processes (*Section 4*); as well as provides a view of the Information Technology Architecture (*Section 5*). The plan identifies technology initiatives that are required to accomplish mission-related goals and objectives; on-going project accomplishments; resources required for successful implementation; and return on investment assessments for these initiatives.

The modernization efforts described in this plan are funded in the Information Technology Fund - Fund 104 and Fund 120 (E-911). Sometimes projects are included in the IT Plan that are funded from other agency resources to take advantage of total available county dollars, to augment investment funding capacity, and provide additional opportunities to meet goals of the IT planning process. Ongoing Department of Information Technology (DIT) operating and personnel costs are funded in the General Fund - Fund 001 and the Technology Infrastructure Fund - Fund 505. Governance, architecture, and infrastructure for supporting IT are described within this plan, however, the specific routine operational work, on-going support efforts, normal upgrades and maintenance work is not reflected in this plan. Together, the four funds support the comprehensive Information Technology requirement of all agencies, lines of business and services. Additional details of each fund can be found in the Fairfax County Fiscal Year 2007 Adopted Budget Plan.

Information Technology Goals

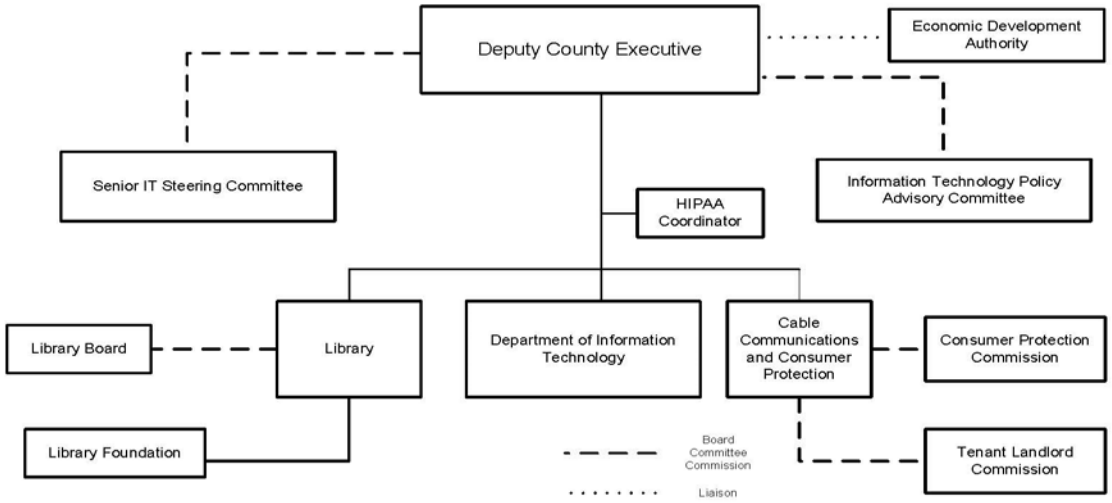
In recognition of the need to link the County's Information Technology efforts more closely to its business goals, the senior management of the County met in 1999 to define the County-wide Information Technology (IT) goals within the context of the service demands that must be met. In addition, the formulation of the goals provided a framework by which the allocation of critical resources could be directed and categorized, and accomplishments identified and aligned with County goals. These goals are reviewed each year for applicability and relevance against new demands on county business requirements and IT industry trends.

In FY 2004, based on global changes in social and economic paradigm shifts, new priorities were adopted for funding. These priorities were re-validated for FY 2007:

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

The following pages describe the organizational structure of Information related departments and their alignment with strategy and deployment of information technology in the Fairfax County Government.

1.2 DEPUTY COUNTY EXECUTIVE ORGANIZATION



The Deputy County Executive for Information Departments (DCE) is responsible for the overall management of technology and information resources. The Board of Supervisors has broadened the role of the position since it was created as the County's Chief Information Officer (CIO) in FY 1995. The DCE is responsible for a broad range of information related departments. The Department of Information Technology, Fairfax County Library/Archives, the Department of Cable Communications and Consumer Protection, and the Health Insurance Portability Accountability Act (HIPAA) Compliance Office also report directly to the DCE. The Office of Public Affairs information function works closely with the DCE to develop a comprehensive communications message strategy and to ensure the integrity of content for published information served through the County E-

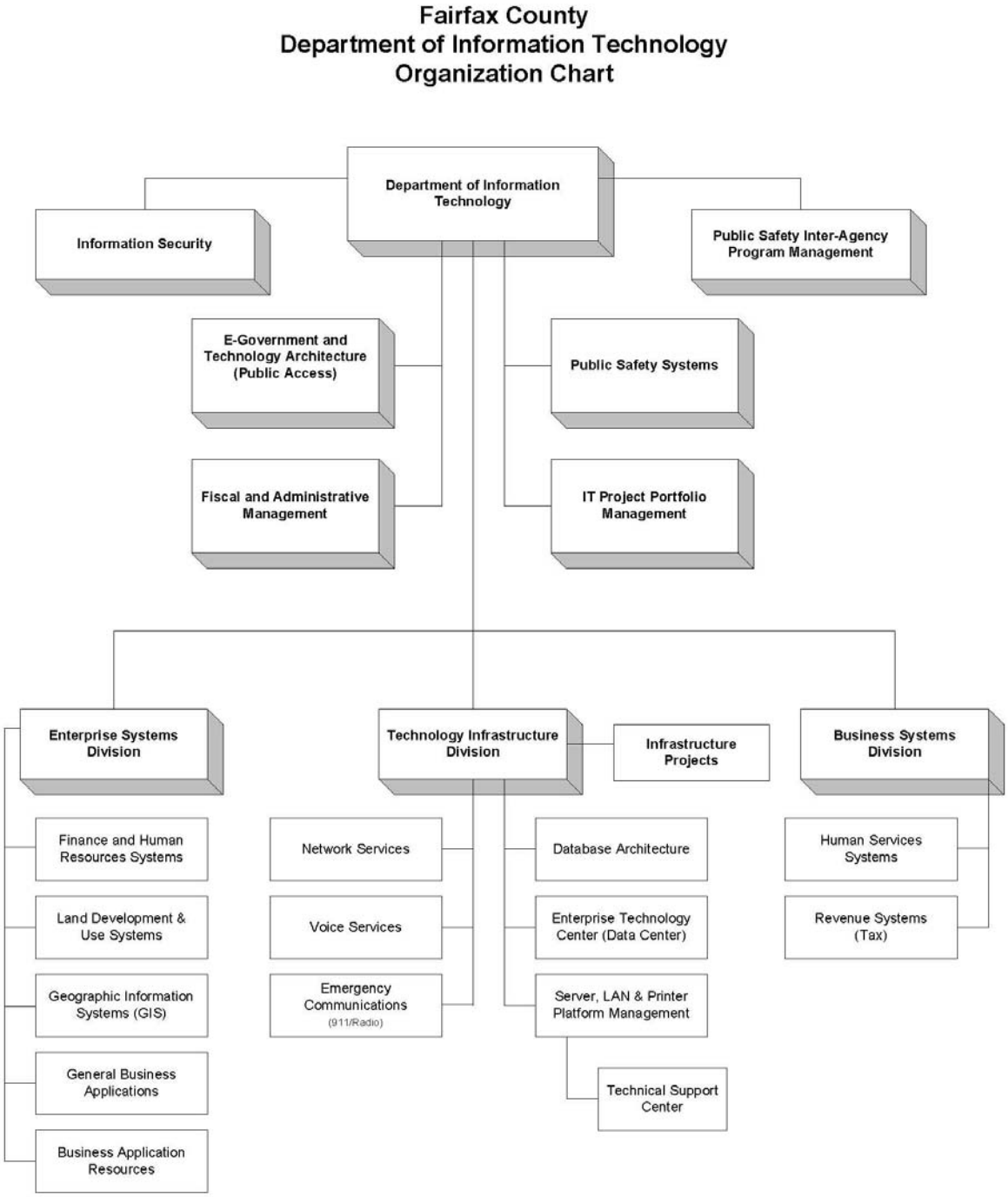
government programs. The DCE serves as the liaison to the Economic Development Authority in conveying the County's best technology practices and assisting with marketing the County to prospective businesses. The DCE's broad responsibility for information spans policy, books, television, technology, health, homeland security, consumer protection and the management of documents. In 2006, the CIO position was renamed Deputy County Executive for Information Departments.

To assist the DCE with technology direction and validation of trends, the Board of Supervisors in FY 1998 created a private sector group called the Information Technology Policy Advisory Committee (ITPAC). The group is made up of 10 members appointed directly by the Board of Supervisors and five members that are recommended to the Board by the Fairfax County Federation of Civic Associations, School Board, Northern Virginia Technology Council, League of Women Voters and the Fairfax County Chamber of Commerce respectively. The ITPAC meets on a regular schedule to review the County's technology projects, plans and direction and endorses the annual technology spending plan to the Board of Supervisors during budget review and deliberations. The ITPAC serves as advisors to the DCE, providing advice, experience and support for the IT program.

In FY 1999 an internal County group, the Senior IT Steering Committee, was created to assist and advise the DCE and Chief Technology Officer (CTO). Today, this group includes the County Executive, Deputy County Executives, Director of the Department of Management and Budget, and Director of the Department of Information Technology/CTO. The committee's work is augmented by the Senior Management Team composed of County department heads for participation in key policy issues. The Senior IT Steering Committee meets on a regular basis to look at specific IT initiatives, opportunities and issues; set the County's IT strategy based on the Board of Supervisors' direction; and approve the annual IT investment plan which is delivered by the Deputy County Executive to the ITPAC for its endorsement.

The current DCE Organization depicted above groups the County's information programs and services under a single authority to provide efficient and effective constituent services. The following paragraphs will highlight each organization with a discussion of its mission, goals and technology focus.

1.2.1 Department of Information Technology



The Department of Information Technology (DIT) provides leadership, process, governance, architecture, resources and expertise in deploying modern information technologies to improve government efficiency and citizen access to government information and services. To give focus and direction to staff within the department and to help plan for the future, an overall mission has been established together with eight goals. The mission and goals statements were developed with considerable input from staff regarding the 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. These goals were established to energize the department in performing its functions of developing and maintaining current information technology systems, and providing a technology infrastructure and customer service support to County agencies. The Department of Information Technology is charged with establishing technology architecture, implementing and managing systems, applications and communications, and managing and security the county's information assets.

The organization structure of the Department of Information Technology (DIT) has evolved over the years to align with changing priorities, trends and expertise requirements IT, and to leverage technology platforms and available 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 and distributed architectures and wireless hand-held computers, as well as the number of platforms that support enterprise-class solutions and software applications used in support of various County functions. 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 four major divisions: Enterprise Systems Division supporting applications development and support for grouped agency business areas, corporate systems and Geographical Information Systems that are used by all agencies; Business Systems Division which supports specific agency business areas; Technology Infrastructure Division that manages all hardware, communications and network platforms enterprise-wide, integration tools, enterprise messaging applications, desk-tops as well as the network based digital multi-function printing devices that supports document management County-wide for distributed printing, print-on-demand, and electronic transfer of printed information, and the help desk service. The Architecture, Planning and Administration Division provides support to the line divisions and all IT activities including standards, IT portfolio management and IT policy support, and architectural direction including web, CRM, and information architecture. In FY 2005, a new division was carved out of existing groups to focus efforts on the growing requirements of public safety, homeland security, and regional collaborative and interoperability initiatives and mandates related to those areas.

Mission and Goals

The Department of Information Technology will deliver quality and innovative information technology solutions to provide citizens, the business community and County staff with convenient access to appropriate information and services.

Goal 1: Deliver timely and effective responses 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 that is 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.

Ten Fundamental Principles of Information Technology (IT)

In addition to the Department of Information Technology's Mission and Goals, Fairfax County Information Technology (IT) projects and processes are guided by ten fundamental principles approved by the Board of Supervisors in 1996 and updated in 2003.

1. Our ultimate goal is to provide citizens, the business community, and County employees with timely, convenient access to appropriate information and services through the use of technology.

2. Business needs drive information technology solutions. Strategic partnerships will be established between the stakeholders and County so that the benefits of IT are leveraged to maximize the productivity of County employees and improve customer services.

3. Evaluate business processes for redesign opportunities before automating them. Use new technologies to make new business methods a reality. Exploit functional commonality across organizational boundaries.

4. Manage Information Technology as an investment.
   - *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.

- *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.*
- *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.*
- *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 often will be introduced through pilot projects where both the 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.

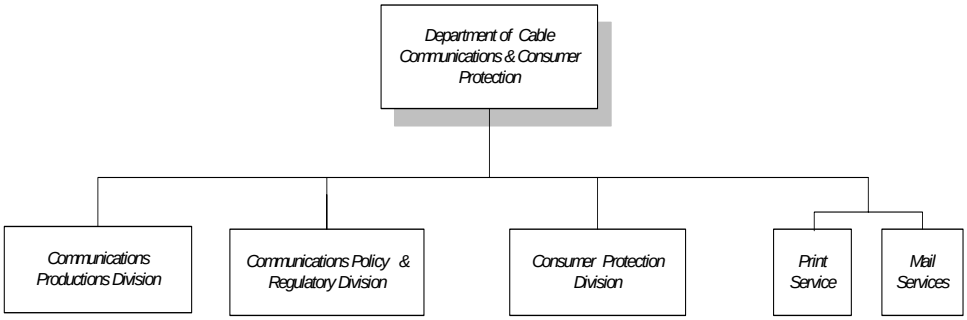
7. Provide a solid technology infrastructure as the fundamental building block of the County's IT architecture to support reliability, performance and security of the County's information assets. Manage and maintain the enterprise network as an essential communications channel connecting people to information and process 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 a 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, and, achieves business goals. In consideration of this, it is recognized that certain county agencies operate under business practices that have been established in response to specific local interpretations and constraints and that in these instances, the institutionalization of these business practices may make the acquisition of COTS software not feasible. Develop applications using modern, efficient methods and laborsaving tools in a collaborative application development environment following the architectural framework and standards. An information architecture supported by a repository for common information objects (e.g., databases, files, records, methods, application inventories); repeatable processes and infrastructures will be created, shared and reused.

10. Capture data once in order to avoid cost, duplication of effort and potential for error and share the data whenever possible. Establish and use common data and common databases to the fullest extent. A data administration function will be responsible for establishing and enforcing data policy, data sharing and access, data standardization, data quality, identification and consistent use of key corporate identifiers.

1.2.2 CABLE COMMUNICATIONS & CONSUMER PROTECTION



The Department of Cable Communications and Consumer Protection has four major areas of responsibility that fit within the overall provisioning of information services County-wide:

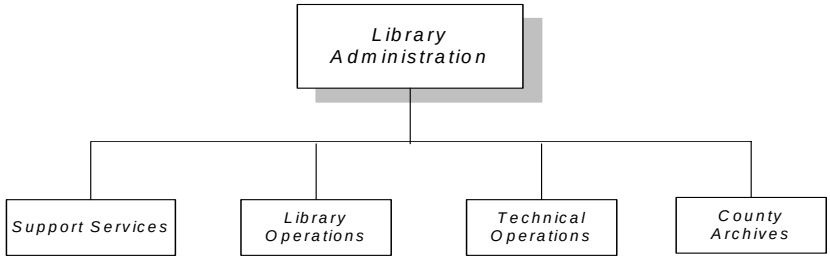
Communications Policy and Regulatory encourages telecommunications and cable industry development throughout the County promoting the greatest diversity and highest quality service offerings at the least cost to citizens and businesses. The division develops goals for future cable and telecommunications industry development and related legislation; provides regulatory oversight and enforcement of telecommunications statutes; and obtains high quality utility services at the lowest possible rates and charges.

Communications Productions provides award-winning productions services for visual communication technologies and training/ informational programming for County employees that best utilize telecommunications resources.

Consumer Protection manages information necessary to protect consumers, investigates citizen complaints and initiates enforcement actions involving violations of consumer protection and tenant-landlord laws; provides staff support to the Consumer Protection Commission and Tenant-Landlord Commission; regulates the taxicab industry in Fairfax County; and administers a licensing program which regulates the businesses governed by chapters 6, 28, 33, 38 and 84.1 of the ***Fairfax County Code*.**

Mail and Printing Reprographics branches provide printing services for major publications and other specialty printing needs, and, mail distribution services for County government.

1.2.3 FAIRFAX COUNTY PUBLIC LIBRARY



Mission

To provide and to encourage the use of library resources and services where the Fairfax County Public Library can best meet the evolving educational, recreational, and informational needs of all the residents of Fairfax County and Fairfax City, thus enhancing individual and community life.

Library Technology Vision

Fairfax County Public Library (FCPL) will assist the residents of Fairfax County and Fairfax City in accessing information by, in addition to traditional library services, providing technologies to access local and worldwide electronic information resources. Library staff will have the skills, flexibility and support to keep pace with the rapidly changing environment to use new technologies to assist users and improve delivery of services. FCPL's goal is to remain flexible and able to maximize opportunities to improve services delivery through technology.

Technology Goals

- 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.

1.2.4 HIPAA COMPLIANCE PROGRAM

The HIPAA Compliance Program will implement the provisions of the Health Insurance Portability and Accountability Act (HIPAA) within Fairfax County Government. HIPAA is a Federal Law enacted by Congress in 1996 to improve portability and continuity of health insurance coverage; to combat waste, fraud, and abuse in health insurance and health care delivery; to promote the use of medical savings accounts; to improve access to long term care services and coverage; and to simplify the administration of health insurance. To coordinate the County's enterprise-wide compliance with the law, the Board of Supervisors approved a HIPAA Compliance Manager position in FY 2003.

Compliance with the law requires ensuring the privacy and security of "protected health information" and the transition of health claims transactions from paper-based to electronic forms. Under the law, residents and employees are provided notice of the County's privacy practices for the handling of their individually identifiable health information. Employees are provided training on appropriate policies and procedures related to the protection of health information in written, electronic, and oral mediums. Finally, technology will support HIPAA compliant business practices with the establishing HIPAA compliant security environments, implementing the EDI standards, and modification of automated information processing systems.

1.2.5 INFORMATION TECHNOLOGY POLICY ADVISORY COMMITTEE

The Fairfax County Information Technology Policy Advisory Committee (ITPAC) was created by the Fairfax County Board of Supervisors to provide the Board with a source of expert citizen advice regarding information technology issues.

The Board has committed itself to providing the County government with the resources it requires to keep pace with emerging trends in information technology; to providing citizens, the business community, and employees with timely and convenient access to information and services through the use of technology; and to using new technologies to create new business processes and improve government efficiency. To maintain these commitments, the Board has made substantial, continuing investments in information technology.

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 duties and responsibilities are as follows:

- Keep informed regarding information technology, including telecommunications, developments and provide recommendations to the Board of Supervisors regarding technical improvements to be incorporated in the County computer and telecommunications systems.
- Review the annual Information Technology Plan and information technology budget and make recommendations to the Board of Supervisors.
- Review major information technology acquisition plans and makes recommendations to the Board of Supervisors.
- Bring facts and issues that it deems important to the attention of the Board of Supervisors.
- Undertake such other activities as become appropriate as information technology changes.

1.2.6 SENIOR INFORMATION TECHNOLOGY STEERING COMMITTEE

A Senior Information Technology (IT) Steering Committee was formed by the County Executive to provide oversight of IT investments to ensure their alignment and support of strategic business plans. 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 that independently and objectively evaluate and make decisions on the overall status, mission needs, and priorities for the County. The committee meets quarterly and reviews 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 and the Director of the Department of Information Technology/CTO. The committee may activate a number of sub-committees around specific issues that would report back to Senior IT Steering. 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.

STRATEGIC DIRECTIONS AND INITIATIVES

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SECTION 2
STRATEGIC DIRECTIONS AND INITIATIVES

2.1 STATEMENT OF DIRECTION

Keeping up with the pace of change in technology and using technology effectively to meet end-user requirements and expectations are still the most critical challenges facing information technology providers. Advances in technology can enable the workforce to provide better and faster service at a reduced cost, but changes in technology can be 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.

The following five initiatives address the County's objective to provide effective, efficient and customer-oriented access to data and services for constituents and for internal government customers on an enterprise scale.

2.2 E-GOVERNMENT

The e-Government initiative uses enabling technology for Fairfax County Government to provide a 24-hour operation. The Fairfax County Web Site, Kiosks, Interactive Voice Response (IVR) systems and Cable TV platforms are integrated into a single strategy for access to information and services in the County's goal to provide a "*government without walls, doors, or clocks*." In addition to the on-going efforts to enhance the look, feel and navigation of the web interface and deploying new services and transactions, the county has achieved much success and acclaim for its e-government focus in integrating the WEB, IVR and Kiosk platforms in to provide a complete public access to services and programs. In FY 2007, the county will continue its efforts to add new services to the e-government channels, including new transactions and e-payments. The e-government program will also continue to work with the Commonwealth of Virginia and federal government agencies in developing web services standards which will enable cooperative access and seamless integration of information for presentation of information and services regardless of the origin or the source.

Major FY 2006 accomplishments for e-Government initiatives included new applications such as Public Events Calendar, My Neighborhood, Sheriff Services Civil Process, and the implementation of a new Search application. We will be expanding our offerings in mobile access by making the county's public website accessible via wireless devices www.fairfaxcounty.gov/mobile. This will allow citizens to interact with the county government through personal wireless device. We also deployed a new kiosk located at the Fairfax County Department of Housing and Community Development. The County continues to work with Homeland Security on regional interoperability initiatives to establish policies, procedures and protocol for the exchange of data supporting emergency response.

Goals for FY 2007 are to continue building new e-service transactions and e-payments, continue improvements for navigation and better synchronization of content, add more interactive features to the WEB site, and to enhance and support existing applications. In addition, DIT will continue to enhance the e-Government channels to make them more compliant with Section 508 for accessibility; and maintain our ultimate goal to facilitate the delivery of integrated and accurate information to citizens via multiple platforms along with an implementation of additional web search capabilities.

Customers Served

Kiosk: more than 9.5 million "Screen Touches" to date, more than 380,000 total users
IVR: 1,118,554 total calls
Web: 1,200,000 visits per month

Information and Services Available

Adult education classes	*Web*
Becoming a child-care provider	*Web, Kiosk*
Board Meeting minutes (searchable)	*Web, Kiosk*
Budget information and approved budget	*Web*
Bus tour schedule	*Web, Kiosk*
Child-care provider list	*Web, Kiosk*
Collection of household trash & recyclables	*IVR, Kiosk*
County Code – full text	*Web*
County demographics	*Web, Kiosk*
County maps, scrollable, printable	*Web, Kiosk*
Courts - Circuit, General District, and Juvenile	*Web, Kiosk, IVR*
Crime statistics, Wanted List, Neighborhood Watch	*Web*
DTA EPay	*Web*
DTA Tax Evaders	
HIPAA	
Institute for Earl Learning Training	
iCARE DTA Real Estate Assessment and Information Query	*Web*
Library Graded Reading Lists	
Library Picture Books	
Offsite	*Web*
Public Meeting Calendar	
Community Emergency Alert Network System (CEAN)	
Fire & Rescue Media Information	*IVR, Kiosk*
Health information	*Web, IVR, Kiosk*
Housing information	*Web, IVR, Kiosk*
Inspection scheduling status	*IVR, Kiosk*
Information for victims of crime	*IVR, Kiosk*
Job opportunities	*Web, Kiosk*
Library information line	*IVR*
Multi-jurisdictional information	*Kiosk*
My Nieghborhod	
Newcomer information	*Web, IVR, Kiosk*
Parks/Recreation information	*Web, IVR, Kiosk*
Public safety information	*Web, IVR, Kiosk*
Real estate property assessment & tax information	*Web, IVR, Kiosk*
Seniors information and programs	*Web, IVR, Kiosk*

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, Kiosk*
Apply for a library card	*Web, Kiosk*
Board of Supervisors compliant forms	*Web, Kiosk*
Building Permit Fee Estimate	*Web, Kiosk*
Directly connect to County staff	*Kiosk*
Download request for proposal/invitation for bid	*Web*
Electronic Mailing List	*Web, Kiosk*
Estimate Electrical Permit Fee	*Web, Kiosk*
File complaints about landlord or consumer problems	*Web, Kiosk*
Find location of closest Library by entering zip code	*Web, Kiosk*
Register & pay for Park Authority classes, camps, & tours	*Web, IVR*
Locate facilities and public transportation	*Kiosk*
Obtain permit/plan status	*Web, IVR, Kiosk*
Pay taxes with credit card	*Web, Kiosk*

Pay taxes via eCheck	*Web*
Pay traffic tickets with credit card	*IVR, Kiosk*
Query current real estate property & tax information	*Web, IVR, Kiosk*
Query Human Services online "Resource Guide"	*Web, Kiosk*
Query for current position on the Housing Waiting List	*IVR, Kiosk*
Query specific court case information	*IVR*
Query status of an inspection, permit, or plan	*Web, IVR, Kiosk*
Query Victim Services data for offender release date info	*IVR*
Register a vehicle	*Web*
Request faxes of court fees and procedures	*IVR, Kiosk*
Renew vehicle registrations	*Kiosk*
Reserve a golf tee time	*Web, Kiosk*
Reserve/renew Library books – search catalogue	*Web, Kiosk*
Reserve a picnic area	*Web, Kiosk*
Report change of address for tax purposes	*Web*
Report a lost pet	*Web*
Report a zoning or noise ordinance violation	*Web, IVR, Kiosk*
Search for information in historical newspaper	*Web*
Search for Health Department clinics by area of County	*IVR*
Search for County agency telephone numbers by keyword	*IVR, Kiosk*
Sheriff Service Civil Process	*Web, Kiosk*
Subscribe to County publications	*Web, Kiosk*
Volunteer to help in the Library or Parks	*Web, Kiosk*
Zoning and Noise Ordinance compliant form	*Web, Kiosk*

2.3 INTEGRATED CONTENT AND DOCUMENT MANAGEMENT

The county is strategically approaching content and document management from an integrated, enterprise approach. Content Management becomes the foundation for organizing and using 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 is developing an enterprise information architecture which frames this plan and becomes a tool for web services, applications development, and web static page content search and navigation. The solution also includes a rich document management capability which allows more efficient management, flow and storage of vast amounts of required paper records. Since many government processes still require paper records, requiring departments to store large volumes of paper over prolonged periods of time, frequent retrieval of the documents is necessary, time consuming, cumbersome and inefficient. The enterprise document management technology with incorporated workflow solution will improve business process efficiency and productivity, and meet the needs to view hard copy records with automated applications to complete services. In addition to fast and reliable business processes, this will minimize the demand for additional paper records storage space, protect against mounting storage costs, and reduce human and physical plant asset risks associated with handling of the voluminous units of paper.

The Business Reference Model (BRM) is the basis for classification of data that aligns with three Business Areas: Service to Citizens, Support Delivery of Services and Internal Operations and Infrastructure. These areas are subdivided into thirty-five separate Lines of Business which cut across all agencies. This BRM provides the foundation for the Enterprise Information Architecture and will allow for the integration of data across Lines of Business within the County. The BRM serves as the foundation for a more exhaustive Taxonomy of Services for the County which is currently under development. When combined with other metadata, this taxonomy will provide for improved search and classification capabilities across application data and static content. This classification of data is the first and most important step in correctly implementing an Enterprise Content Management System.

In addition to continued work on the Information Architecture Framework described above and implementing Documentum's Content Management System, the following has been accomplished:

- Classified the variety of information types currently offered on the Web Site
- Implemented workflow processes and define requirements for contributing content to the County's Web site
- Piloted delivery platforms for Mobile Content (i.e. Wireless "Contact Us")
- Developed an XML Document Model and Metadata associated with static content
- Implemented the Technical Architecture for Content Management
- Continued work on the Information Architecture Framework including:
  - the "Taxonomy of Services" for the County
  - the Inventory of Systems classified by Lines of Business
  - development of an XML Namespace for the County
  - development of repositories for storing XML Objects
- Implemented the Content Management software according to the technical architecture
- Develop the template and methodology for agency web files that are currently on the county's Web site

Goals for FY 2007 as they relate to Integrated Content and Document Management are to:

- Convert the content of WEB files to XML
- Deliver XML content to Web, Kiosk and Mobile platforms

Content management intersects with Document Management. For business activities that also rely on a variety of documents, the document management process 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). Through research and analysis conducted in FY 2003, the County found that best in breed 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 and automate related tasks, and facilitate document distribution.

Another component of IDM includes document imaging, which will continue to play a much larger role in the county's business environment. Despite e-government efforts, there remain situations where there is a continued need for paper documents in certain business processes including hard copy documents that need to be reviewed and accessed in processing cases or required archives; this need for hard copy merged with electronic processes can be addressed through the growing scope of imaging technology. Because of legal mandates, many government processes remain paper-intensive, requiring many departments to store large volumes of paper over prolonged periods of time. Consequently, many County departments are exploring technical solutions to alleviate the demand for increased storage space needs, protect against potential disasters that can potentially destroy volumes of important paper documents, and improve business processes. IDM solutions encompass core business practices, as well as provide better archival and disaster recovery capabilities. The County's continuing investment in this technology is closely tied to these business trends as well as the growing document management needs of its agencies including goals for paperwork reduction.

In FY 2006, the County implemented IDM technology for document work flow projects in the Office for Children and the Department of Family Services, continued work in the Juvenile and Domestic Relations District Court, and the sewer lateral section of the Commercial Inspections Division of LDS in DPWES. Analyses were conducted in the Department of Finance for an automated Accounts Payable imaging system, and document management system for the Department of Family Services. Although the individual departmental business requirements vary for the use of IDM technology, the following benefits and quality improvements has resulted from these projects:

- Increased worker productivity by allowing employees 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 the 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 and electronic storage and backup of information
- Reduction in clerical, paper, printing and storage costs

In FY 2007, the County will continue to implement IDM and workflow technology for projects in the Department of Family Services, Office for Children, the Juvenile and Domestic Relations District Court, the Clerk to the Board office, Department of Finance and the Department of Planning and Zoning. An important consideration for the IDM projects will be to provide for remote access for workers that heretofore relied on paper-intensive processes and have no capability to backup critical paper files and documents. These projects will also facilitate disaster planning efforts to ensure business continuity. Overall, document management and imaging projects address operational efficiency and effectiveness, with the capability to reduce costs, accelerate business processes, ensure regulatory compliance, and improving communication in the agencies. These projects, combined with the potential for integration of content in data-bases also supporting the business process, will result in a seamless process for information utility.

2.4 CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

The expectations of government services continue to change dramatically. Citizens want to interact with government through the channels that best suit their needs. Fairfax County continues to enhance the services with Customer Relationship Management (CRM), technology applications. Incorporation of *Internet Quorum*' (IQ), and '*IPhinity*' call distribution technology has yielded numerous benefits for constituents and multiple County offices and agencies. Significant staff productivity and efficiency improvements have been achieve in supporting information exchange with citizens through multiple communication channels, in-person, telephone, e-mail, web, and Kiosk. More opportunities are allowed County staff to respond better and be involved in the mission and goals of their agencies through the usage of CRM. Fast and convenient access to services and information assist the agencies in responding to citizens based on the needs and preferences.

The successful installation of IQ in 1999 for the offices of the Board Supervisors and the Clerk to the Board to record, route, and manage interactions with constituents and organizations has expanded throughout the County. The Web enabled system '*Internet Quorum'* replaced several obsolete custom applications and provided the expansion of IQ to 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 Department of Human Resource.

The Clerk to the Board of Supervisors uses the IQ Boards and Commissions module to allow staff to track appointments and nominations to boards, committees and councils and to keep 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 has been reduced, resulting in earlier detection of consumer protection violations. The historical research required to discern whether businesses are repeat offenders or not, and 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, and facilitates collaboration between department investigators on complaints and resolution techniques. The system also allows citizens to access complaint histories of businesses online in order to research and better determine the pros and cons of doing business with those merchants. In addition, the system allows Fairfax County Police access to information to check the licenses of 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 to 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, eliminating the need for a legislative aid to manually perform the data entry task and faster ability of the need for County staff to search for bills and comments. The Office of Public Affairs uses this system and includes publications and brochure tracking and workflow. Other benefits include elimination of the cumbersome process of manually tracking constituent requests with a more efficient means of processing and tracking mandated Freedom of Information requests. The Human Rights Commission uses the system to create, track and report on case workflows allowing the HRC investigators to meet multiple requirements. It also streamlines complex discrimination processes and addresses privacy concerns for investigator and conciliators.

The FY05 *'IPhinity'* call center distribution application implemented for Human Services Consolidated Services Planning (CSP) call center offers efficiency in supporting the growing number of people seeking assistance from social services agencies with limited staff geographically disbursed at various sites. Accurate call management, collaborative capabilities, and workforce management tools aid in access to legacy systems, reduce paperwork time, and increases employee productivity. Centralized control to all call center resources, estimated wait time, skills-based routing, virtual call center processing, self-service options, callback messaging, and emergency recording, are all standard features available in the easy-to-use system administrator management interface.

'*IPhinity*' is customizable to route incoming contacts based upon selected criteria, set levels of access, record specialize voice promotes, manage calls based on specific business requirements, and track all interactions to ensure closed-loop resolution. CSP will be able to monitor and manage workload and performance with a comprehensive set of analytical tools for real-time and historical reporting. Computer Telephony Integration (CTI), internal calls or transferred calls will be presented to case worker along with a "screen-pop" of information from agency case systems and databases relevant to the citizen's call. This integrated approach will give CSP the opportunity to better develop relationships with citizens and more effectively focus resources to address their needs.

Future Enhancements

Future enhancement of the county's CRM initiative include implementing enterprise 311 Call Center capability to allow citizens to interact with the county through a single, clear point of entry eliminating the need to navigate through hundreds of telephone numbers to find the appropriate service department and reduce the calls to 911 for non-emergency help and assistance. A virtual 311 Call Center will integrate existing call center assets, improve the citizen's communication and experience with Fairfax County Government and serve as the County's primary unified communication gateway for all residents and business. This single point of access between citizens and local government would standardize call taking operations and enable employees to answer citizen questions and log service requests. Call takers will be able to respond to a broad range of questions spread across multiple databases which ensure all call takers have the most current information at their fingertips, regardless of the source. Based on department business rules, call takers will process request for service or issues using the comprehensive and flexible workflow tool provided to integrate routing to appropriate staff members. Service level agreements and partnerships with appropriate state, federal, and private entities that are partners with the County in service delivery will be established to further meet the citizen service needs and increase confidence in government. Other modules will be added, including CRM analytics and integration of the County's Geographic Information Services (GIS), which supports the pinpointing of related complaints or contacts within a specified geographic area.

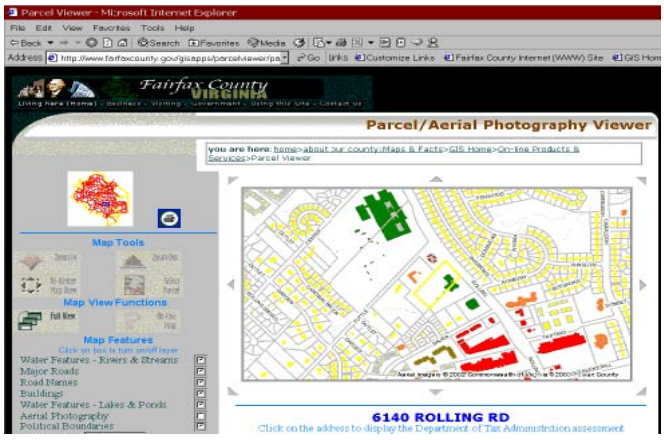
It is becoming critical to integrate CRM technology applications and communication channels with a common interface to supply one-stop customer service and a single citizen view within the County. CRM technology applications improve service delivery aspects to the citizens before, during, and after contact. An enterprise CRM application would consolidate citizen information and enable optimal service and rapid citizen response. Strategic alignment and integration of IT investment with IQ, *IPhinity*, and FIDO are the building blocks to support the usage of an enterprise case management and better inform the citizens and increase satisfaction. It will also provide greater visibility into the top concerns of constituencies; which enables agencies to proactively address local matters of interest and concerns, resulting in both service improvements and a reduced volume of incoming inquiries.

An enterprise-wide, automated, full function distributed CRM solution will organize the tracking and monitoring of communications, cases, contacts, events and complaints. It will offer a Web-enabled solution that will provide a robust, consistent foundation for managing all citizen relationships and support a knowledge-based, centralized repository of data allowing the County to leverage emerging technologies as it moves into a more unified messaging environment. Live help using a Web interface, such as instant messaging, will give users another method for receiving real-time support, and will incorporate multi-media and other forms of digital and wireless communications to improve the user experience.

Enterprise CRM supports a holistic view to aid in making well-informed decisions about service delivery to the County's diversified population and improvement of communication through seamless unified access of information via the County's web site, Kiosk, IVR systems, cable TV, in-person, as well a live 311 Agent.

2.5 GEOGRAPHIC INFORMATION SYSTEM (GIS)

Fairfax County's GIS has continued its growth in the number of direct GIS users as well as indirect users, working with applications that now include GIS embedded as part of their operation. Some of these tools are available to the public via the Internet, as well as county staff on the intranet. These developments enabled GIS to meet its goals for 2005 with a range of activities. Overall GIS usage by the public and by County staff increased as a result of heavier use of existing applications and several new applications including the new My Neighborhood application, the internal crime statistics mapper, and the IQ GIS interface for BOS offices. The Digital map viewer increased usage nearly 100% as more property/zoning and other maps are now viewed/downloaded via the internet. The amount of data available in the GIS data warehouse was also significantly increased. Forty-five new layers of data were added in FY 2004 and 2005. An additional 68 layers of national and international data was also added. The GIS data warehouse now holds over 470 layers of data. The overall size of the vector data has increased to 27.7 GB, and the raster data is now over 1.4 TB. Vector data includes all of the data layers listed in Table 1 – it is data represented by points, lines or polygons. Raster data includes the digital imagery: raw photographs, orthophotos, and oblique imagery.



The amount of data within the layers has also increased. Table 1 illustrates some of the most significant layers and their 2005 and 2006 values:

Table 1

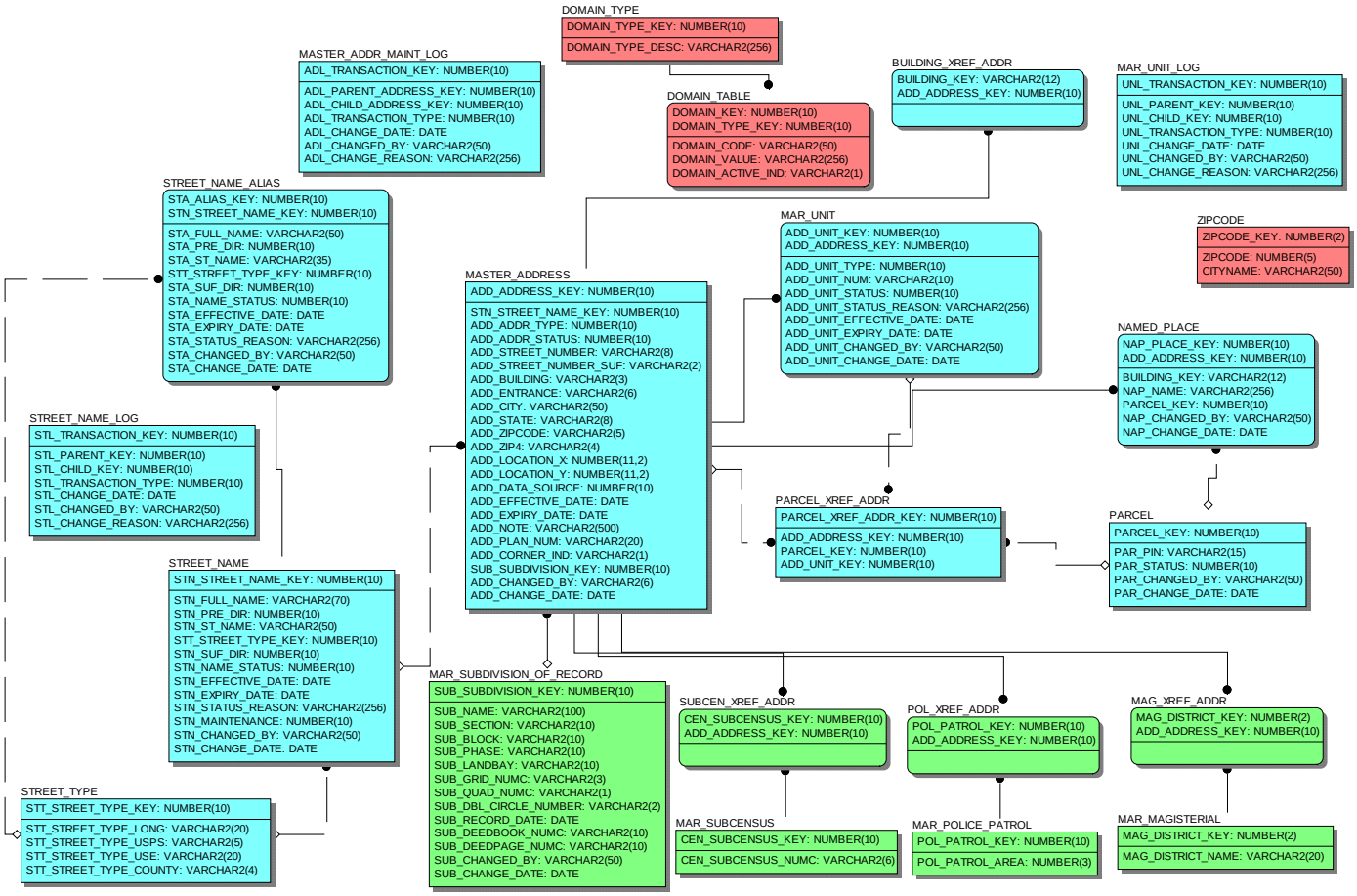
Data Layers	FY 2005	FY 2006
Parcels	341,000	343,500
Addresses	360,000	365,000
Zoning Overlay Districts	200	400
Zoning Cases	8,200	14,600
Building Footprints	248,000	248,000
Rooftop Outlines	0	4,000
Miles of Roads	4,000	4,800

In FY 2006 and subsequent fiscal years, the GIS office continues to increase the number of applications that

include GIS within them, further enhance existing web-based GIS applications (for instance My Neighborhood). The GIS data will continue to be enhanced, and the quality improved as it was in FY 2005 where the accuracy of the voting precincts, school planning areas and zip codes was improved to the accuracy of the underlying parcels.

Having key county data available digitally through the GIS provides a range of benefits to constituents as well as county staff. The orthoimagery is widely used within GIS as well as over the web. Because the parcel and zoning data is now maintained digitally, production of the county's parcel and zoning books has been greatly accelerated. Many times consuming manual steps are now replaced with the digital production process. Additionally, the changes to those maps are posted to the internet daily,

providing web users of the Digital Map Viewer with the latest versions of the maps. Prior to that application those maps were printed for distribution annually.



The breadth of GIS utilization across the County, and the extent of its integration into the overall IT architecture have builds on the award winning plans and efforts of the preceding years. In FY 2004, 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. Other awards to county GIS programs include the VA Governor's Technology award for DPWES' use of GIS in routing refuse collection vehicles. Fairfax County's GIS has 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. It also received recognition from the National Association of Counties for its use of GIS in the reap-portionment process. The increasing use of GIS in Agency operations is an important goal of GIS and the recognition by Governor Warner highlights that successful and innovative growth in use.

Updating of the 1997 aerial photography was continued with about 100 square miles of the northwest quadrant of the County having orthoimagery delivered. The Northeast quadrant was flown in March 2003 and the orthoimagery was delivered in late spring 2004. The Southeast quadrant was flown in March-April 2004. Orthoimagery will be delivered in mid FY 2005. This will complete the first orthoimagery update cycle. A complete quadrant was updated in 2001, 2003, 2004 and 2005. The 2002 update was skipped due to the availability of the State imagery. The two images are of the same area of the county. The first is an orthoimage, taken directly over the homes, while the second is oblique, taken from the side rather than directly overhead.

The underlying GIS hardware and software architecture was significantly enhanced. The Oracle-SDE data warehouse was moved to the County's Enterprise Sun server, providing greater reliability and speed. The Citrix application servers were upgraded

and now have over twice the capacity as the previous servers. Day-to-day operation of those servers is now the responsibility of DIT's Technology Infrastructure Division. This allows the GIS staff to focus on new layers and applications. The County also received orthoimagery for the entire county area, plus surrounding jurisdictions through Virginia Geographic Information Network's state-wide orthoimagery acquisition in 2002.

Oblique aerial imagery was flown and delivered and brought online in FY 2004, Oblique imagery shows the sides of buildings, which orthoimagery does not. The side views enable County Assessors to more efficiently view and determine property values. The views also provide public safety officials with key information in planning emergency response, since they can see windows and doors and determine dimensions and heights above the ground.

The master address database project continued and commenced building the actual database, including cleaning and verifying the address data being entered into it. The project will now continue through FY 2005. Addressing data is a core component of the County's GIS. Because the vast majority of County data is about a specific location within the county (approximately 80-90 percent of municipal data are locational), it is important to ensure that the data can be linked to the GIS in order to take advantage of "place-based reasoning" and analysis. The most common locational link is property address. The resulting system will provide current and correct addresses to all County agencies. It will standardize the address format and simplify linkage to address by making the data available on an enterprise server using County standard RDBMS. The planning and requirements done so far on the Address database have assisted in the design specification of at least two major database systems being planned and implemented for other agencies: The new Integrated Assessment System (IAS, replacing the Real Estate Assessment and Billing System (REABS) and the new Fairfax Inspections Database Online (FIDO) the replacement for the Inspections Services Information System (ISIS). The Master Address Repository (MAR) data scrubbing was completed in mid FY 2005 along with the address maintenance tool. The data and application now provide the county with a single, authoritative source of address data. It also enabled a mainframe application to be retired. Initially four applications link to the MAR (FIDO, LDS, GIS and PAMS). The data model for the MAR is displayed in the following figure.

The pioneering street centerline data sharing agreement with the Virginia Department of Transportation has resulted in the development of a commonly defined centerline file for all of the northern Virginia counties. This will enable the use of a regional centerline file for emergency preparedness planning and response, as well as for regular activities such as transportation planning and vehicle routing. In FY 2004, the State's GIS group (Virginia Geographic Information Network) augmented our centerline data with VDOT identifiers. This will enable the County to obtain specific VDOT data on County roads. The completed data was delivered to the county in FY 2005 and a maintenance approach was established to enable both the state and to maintain and share centerline information so that each participant has up to date street centerline data.

The GIS Branch continues to provide County employees support via the DIT Technical Support telephone numbers. Pagers are issued to the GIS staff to provide quick callback response to users.

Administrative Efficiencies and Service Quality Improvement

Over 25 county agencies now use GIS to some extent in their operations, including the GIS Branch itself.

- The transition to digital property and zoning information now enables the GIS Branch to maintain these maps daily. These maps are processed and made available for County staff and public users via the web. Because the production process is digital, more map series can be easily added. In FY 2005 a soil series map was added to the current set of maps.
- The centerline file was modified to reflect the Northern Virginia common centerline elements and made available to County agencies.
- Substantial savings are being realized in the Department of Public Works and Environmental Services through the use of GIS. It was recognized by the State of Virginia for its integration of GIS with refuse vehicle routing and the subsequent flexibility and cost savings.

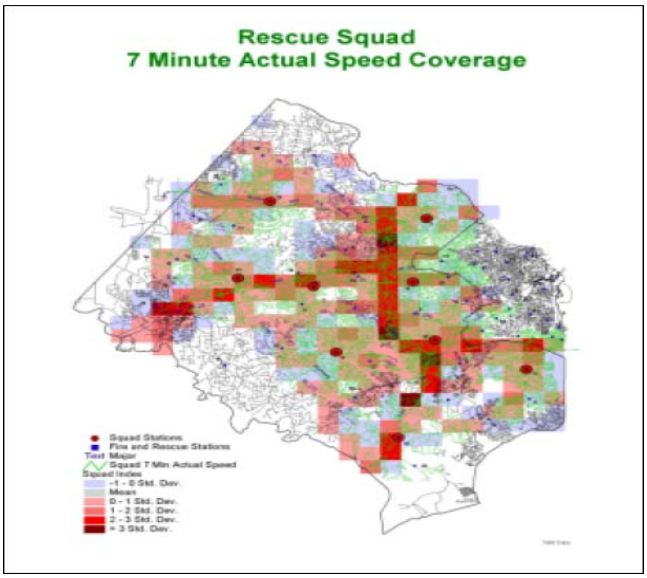
- GIS is being intensely used by the Department of Public Works as part of the perennial streams evaluation project. GIS technology has enabled the mapping to be completed in weeks rather than months.
- The Department of Public Works has digitized the sanitary sewer lines into the GIS and maintains them regularly. Storm sewers are in the process of being digitized, and should be complete by the end of FY 2005.
- The Department of Zoning is digitizing the Comprehensive Plan into the GIS for easier maintenance and viewing. That work was completed in FY 2005.
- The GIS now contains data from Fairfax Water and the City of Fairfax on hydrants and water mains.

The Department of Planning and Zoning staff is using GIS programming and analysis to tackle problems that would have ordinarily been overwhelming manual tasks. Such tasks include assignment of regional transportation analysis zone numbers to each of Fairfax County's 340,000 individual parcels. GIS programming now makes this a routine and quick process. GIS is streamlining the Annual Plan Review (APR) through the use of a new Comprehensive Plan Amendment Tracking System (CPATS). In addition, GIS is used to with CPATS to generate notices for plan amendment applications. User errors are largely eliminated and the latest information is always used. GIS is integrated into DPZ's Land Information System (DPZLIS) The Staff Report Locator Map Production System module of DPZLIS is used to quickly create staff report maps by interfacing. Environmental planners use DPZLIS to generate environmental assessments of LDS or APR application subject areas. DPZLIS is also used widely by staff to generate custom page size maps of anywhere in the county they desire. These products have been especially beneficial in Zoning Enforcement issues. Public users can now check on the status of permits for development and view maps of the work via the internet.

The Office of the County Executive is using GIS extensively in the interdepartmental Strengthening Neighborhoods Building Communities effort. That program does extensive analysis of demographics to identify areas to focus strengthening efforts.

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 the 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 would be affected by planned canker worm spraying and contact them ahead of time. The GIS also enabled them to provide spraying coordinates to the helicopter spray crews so that balloons would not have to be used. This was a significant time and cost savings.

The Fire and Rescue Department (FRD) has been making substantial use of GIS and is experiencing significant savings. For instance, in the process of responding to Fire Hydrant and Insurance queries, the GIS saves about 50 percent in staff time to determine the distances. A new Web application being planned will provide even more savings once it is developed



and online. Another example of FRD's savings is in identifying the five-minute response time areas for stations — a factor crucial to establishing response areas that are within response time limits. Staff savings were estimated at 98 percent in doing that countywide analysis.

The Police Department had significant success in its use of GIS in crime analysis. In two separate instances, the Department's crime analysts were able to identify spatial patterns in crime incidents and successfully predicted the subsequent crime locations. In both instances suspects were arrested. Daily maps are now available showing the previous day's crime statistics.

GIS was used extensively in planning for and responding to flooding from Hurricane Isabel.

In FY 2007, the GIS Branch will initiate more strategic interaction with County agencies to foster their 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 for Homeland Security and Emergency Management efforts. The challenge is to continue foster, broaden and integrate growth of need and use with management involvement and support.

The GIS Branch is also pursuing a number of strategic activities to foster the sharing of GIS data and resources, particularly in the area of homeland security. The County is a member of NACo's GIS committee which looks at key GIS issues affecting counties. GIS staff has also participated in planning the implementation of the Geospatial One Stop portal (*http:// www.geodata.gov/gos). Lo*cally, 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 the development of a regional centerline file structure that will be part of a state wide centerline file project. The Branch works closely with the State's GIS agency (Virginia Geographic Information Network) and jointly participated in a national summit to further the coordination, cooperation and collaboration on GIS issues and data. Internally, the GIS Branch has been working with the County's Emergency Management Office to identify possible funding opportunities for some of the County's GIS data and/or hardware. The GIS Branch now directly participates in the Emergency Operations Center when it is activated. In addition, the GIS Branch is working with the Police Department to develop a web-based crime mapping application that will enable police to easily view up to date crime statistics and their locations. Some of this functionality will also be made available to the general public. In FY 2005, the county's GIS manager became a member of the newly formed COG CIO's GIS subcommittee, working on regional interoperability initiatives to include development of a regional GIS map and tying the GIS layer with a regional data exchange hub.

Additionally, there will continue to be emphasis on data quality, system reliability and connectivity as well as implementation of new GIS applications. These aspects are crucial to implementing GIS as a data "utility" across the County so that users at any of the County's offices can "turn on" their GIS "data tap" and have all of the data they need available to them immediately. Data quality is a paramount issue. Rigorous Quality Assurance/Quality Control measures have been implemented on the parcel data updates. Similarly, rigorous quality standards have been developed for the aerial imagery being acquired. System reliability is becoming an increasingly crucial issue as more users integrate GIS into their daily operations. To ensure that the technology is available to them, the GIS Branch is procuring additional servers and software to provide redundancy in case one of the systems goes offline. The GIS Branch is now monitoring the performance of its applications while the DIT's Technology Infrastructure Division monitors the underlying hardware and communications links to ensure reliability. Critical applications are monitored around the clock and staff members are on call if system outages occur outside of work hours.

System connectivity is essential for thorough integration of GIS into County operations. It involves establishing robust, reliable and preferably real-time links between the GIS data warehouse and other vital county databases like the new IAS real estate system, the Land Development System (LDS) and others. GIS staff will be working closely with other agencies such as the Department of Tax Administration and the Department of Planning and Zoning to ensure optimum connectivity between the GIS data warehouse and their operations as well as with DIT to help provide sufficient bandwidth to offices that require it for GIS.

Finally, as the GIS Branch works closely with other agencies, staff will design and implement specific applications to enable users to more easily do the spatial analysis and querying they need to do with the GIS data. These custom applications will not only decrease the time necessary to do the queries, but it will increase the number of staff that can use the data since the applications will be designed specifically for their operations.

2.6 FAIRFAX INSPECTIONS DATABASE ONLINE (FIDO)

The Fairfax Inspections Database Online (FIDO) project (formerly known as ISIS Replacement) is a strategic initiative to consolidate inspection services provided by multiple County agencies into a single software solution and to implement e-permitting capabilities for customers. The FIDO project will replace more than two-dozen existing databases and systems spanning four user agencies. The new system will enable all of the user agencies to work more collaboratively in their inspection and code enforcement efforts. This multi-million dollar, multi-year project connects four agencies in providing permitting, plan review, inspection, complaints management, and environmental health related services. Goals for this project include moving from the mainframe environment to a platform that enhances multi-agency access and participation in the affected processes, enhancing customer service by streamlining the permitting process, and facilitating the performance of as much business as possible via the Internet. It is envisioned that the new system will provide online permitting, facilitate enhanced plan review capabilities, integrate with the GIS to capture and present data in a graphical format, integrate with the existing Land Development Systems' (LDS) database to ensure the seamless availability of land development data, and provide a virtual one-stop shop for processing permit applications.

The approach for this project represents a concerted effort to harness the expertise of all stakeholders in the design, acquisition, and implementation phases to ensure a seamless, streamlined integration with all other pertinent systems. A project steering committee comprised of local and national agencies, both public and private, was formed to provide guidance in these matters. In addition, teams of representatives from each of the core user agencies and the Department of Information Technology (DIT) have been established to assist in the management of this effort and for the coordination of gathering system requirements from the stakeholders. Customers and county staff that use the system on a daily basis formed numerous workgroups to provide critical input for the development of the user and system requirements. Additionally, these workgroups included staff of the Health Department, Department of Tax Administration, Fire and Rescue Department, Department of Planning and Zoning (DPZ), Department of Public Works and Environmental Services (DPWES), Department of Finance, and DIT. The collaborative efforts of these groups provided input on the needs of all the beneficiaries, with a concentrated focus on the day-to-day customers and the numerous organizations that rely on the County for permit processing and inspection information. Many of these teams continue to work on the configuration and implementation of the new system. The vision and long-term goals established for FIDO require that the project be divided into three manageable segments. Although the primary focus of this project is the replacement of the legacy Inspection Services Information system (ISIS), the first two phases that have been implemented include the Complaints Management System for the DPZ, Health Department and the Contractor Licensing modules for the DPWES and the Health Department.

The FIDO system creates adaptability on a new platform that will serve as the foundation for all future e-permitting enhancements while providing immediate additional functionality and a streamlined process. The project will include the acquisition of a web-enabled system with the capability to provide access to permit information and the permit process 24 hours a day, 7 days a week and the availability of real-time wireless inspection results. The system will provide a virtual one-stop shop offering e-permitting opportunities for many projects not requiring plans. The replacement system will also provide managers the ability to perform an ongoing analysis of efficiency and effectiveness of resource utilization (including tools such as workflow processing, deadline reminders, identification of bottlenecks within the process, and benchmarking indicators).

Anticipated future enhancements to the new system include the electronic submission, distribution and review of plans and permit applications by all required review agencies; the issuance of permits online for complex projects requiring the submission of large scale plans; the use of project-specific extranet sites to facilitate communication and to create a more collaborative plan review and permit issuance process. The completion of this project will position the County to utilize additional e-government capabilities and will more fully integrate all of the land development processes to facilitate information sharing and one-stop permit processing. While enhancing customer service, this project will allow greater and immediate public access to permit related data, which in turn reduces customer inquiries and saves significant amounts of staff time. The management of the land development process will be enhanced by the ability to track construction projects throughout the project lifecycle. The

consolidation of related data into a single system will improve the process as well as the consistency and reliability of information provided to customers. Finally, the vastly improved search and retrieval capability will facilitate research by the public and the County.

The early stages of this effort focused on the collaborative development of a comprehensive Request for Proposal (RFP) to procure an appropriate solution for the e-permitting system and to replace the multiple stand-alone inspection related databases being utilized by the Fire and Rescue Department (FRD), as well as the functionality required to manage complaints for the Department of Planning and Zoning along with ISIS. In FY 2003, a comprehensive review of vendor proposals - including both custom solutions and COTS packages was completed. The review process included the formation of Selection and Technical Advisory Committees (SAC and TAC) that involved representation from all key user agencies as well as from the DIT. From this process, the Hansen, Inc. solution was selected. In FY 2004, the focus shifted to configuration and implementation of the new suite of software products. The result has been the successful implementation of the first three phases of the project – Complaints Management for DPZ, Contractor Licensing for DPWES and the Health Department, and Complaints Management for the Health Department. The primary focus in FY 2005 and FY 2006 has been the implementation of the FIDO module that will replace the ISIS system in DPWES. FY 2006 will also focus on implementation of the FIDO system in the Fire and Rescue Department.

The architecture for the new system is compatible with the existing LDS client/server architecture, which includes an Oracle database. This effort includes replacement of the following systems:

- Inspection Services Information System (ISIS)
- Building Code Services Online (ISISnet)
- ISIS Handheld Inspections System
- Permit Applicant tracking System
- Fairfax County Contractor Licensing Database
- Elevators Inspections Database
- County Cross-connections Database
- HMIS system for Environmental Health Services
- HealthSpace system (an interface to the State HealthSpace system will remain)
- Residential Use Permits (RUPs) portion of the PAMS Application
- Non-Residential Use Permits (Non-RUPs) Application
- Multiple stand-alone Fire Prevention Services Databases
- Multiple stand-alone Environmental Health Services Databases
- Paradox Complaints Tracking System

The FIDO solution is consistent with County standards and fits well with County's e-government strategy of using emerging technologies to enhance services. In FY 2006, most of the work for design, construction, and implementation of the ISIS Replacement portion of the project will be conducted. (See section 3 for project information).

2.7 TELECOMMUNICATIONS

Voice communications is a bedrock technology in today's technology architecture. As government is asked to do more with less, stretching limited financial and human resources, it relies upon efficient voice communications to improve efficiencies and meet the growing needs of citizens. Whether it is citizen access via e-government, efficient management of government information, the advancement of education, the safety of our children on school buses, or most recently, homeland security, voice communications plays a critical role.

Integrating voice, video and data communications onto a common structure, which has been envisioned by the industry since the 1980's, is now becoming a reality. This convergence will bring tremendous benefits to enterprises such as Fairfax County that utilize large and disparate voice and data networks. New types of voice service platforms that support data application integration are commercially available and are seen as a cost effective means to improve the County's service to its citizens. Currently, that fully converged world is the provenance of "early adopters". After decades of high quality phone service provided through the traditional telephone networks, users expect new systems to have consistent voice quality, with never a doubt that they will hear dial tone when they lift the telephone receiver. At this point the industry is in the process of determining how to ensure 'five nines' quality in converged networks.

The long-term strategy for Fairfax County is to implement Voice over IP (VoIP) services and obtain the maximum utilization of its networking capabilities as well as garner the advantages in functionality and features that this leading-edge technology provides. Pure VOIP technology will soon be stabilized to the point where the risk of enterprise implementation will

be acceptable to the County. As a result, DIT will implement a strategy for voice services, utilizing convergent-IP ready technology, over the County's fiber I-Net. This strategy includes a solution architecture that is scalable to support the variety of county sites and agency business requirements distributed over 400 square miles, and remote access needs. The strategy uses IP-based telephone service at the smaller sites, so that they can also be brought into the common voice enterprise architecture, avoiding investment in larger more expensive equipment. This approach is not without some service quality risks. Careful planning will significantly reduce the risks involved in converging IP data traffic with IP voice traffic onto one data network.

We believe this strategy is both prudent and forward-looking. It will position the County to increase its use of advanced convergent technologies as these technologies mature. It allows the county to leverage wide-area fiber network and platform infrastructure for both voice and data, and facilitates reductions in other voice service operational costs. The plan is in full alignment with the County's principle of implementing contemporary, but proven, technologies, optimizing IT investments and creating more operational cost efficiencies.

The following six strategic goals for Fairfax County voice services were developed and endorsed by senior County management. These goals are the building blocks of Fairfax County's Strategic Voice Technology Plan.

Goal 1: Optimize the total life cycle cost for voice services across the County Government. Make use of available facilities, such as the I-Net to reduce operational costs. Protect County investment in plant and equipment.

Goal 2: Provide countywide common voice architecture. Allow any County phone instrument to be accessed from the primary voice network. Move to a common, standards-based architecture as industry standards become stable.

Goal 3: Provide remote technology network access for voice and data to expand secure remote access uses and Telework. The switch architecture should provide a seamless extension of voice communications and allow remote access to telephone features.

Goal 4: Provide compatibility with "best-in-class" citizen access technologies and processes.

Goal 5: Develop a "survivable" architecture that is scalable. In the unlikely event of the loss of a major County government facility, e.g., the Government Center or the Massey Complex, the architecture of the County voice communications systems should be re-configurable to permit continued government operations without degradation.

Goal 6: To converge voice and data onto one network. The switch architecture should support convergence of voice and data onto a single IP switching fabric.

To achieve the Goals for next generation voice switch architecture, as discussed above, there are a number of technical requirements that the target architecture should meet. Installation of independent phone systems for various sites--the future switch architecture is minimized, and it must support the County's integrated network philosophy with a single logical architecture. The solution must address the large number of County locations of various characteristics, supporting a variety of business and operational needs of county agencies, must be scalable and expandable, and should support a range of configurable telephone instruments and feature sets. The solution must also address the following requirements:

- Constituent Relationship Management (CRM) Technology
- Automated Call Distribution/ Interactive Voice Response
- Computer Telephone Interfacing
- Remote Access and Telework
- Unified Messaging
- County-wide Voicemail
- Inbound Caller ID
- Teleconferencing

The architecture must also facilitate development and rollout of a uniform dialing plan across the County offices, and fully support requirements for enhanced 911 Automatic Location Information.

The transformation of Fairfax County's voice platform is a significant endeavor that will require a great deal of planning and thoughtful implementation over many months, but it will have a revolutionary impact on the way that the County conducts business and provides services to its citizens. Voice over IP (VoIP) is clearly the strategic technology that the County will move toward, using a phased approach to minimize the risk at the two core locations. The new voice network infrastructure will provide uniformity of

telephone features at all County locations and will be the foundation upon which to integrate function specific call centers, creating a virtual Constituent Contact Center that will streamline incoming call processing while reducing call center operating costs by maximizing agent productivity and lay the groundwork for the incorporation of future appropriate technologies.

In FY 2005, requirements for an RFP were developed. In FY 2006, the County selected an enterprise platform. Implementation of this comprehensive solution begins in CY 2006, and will continue for several years in incorporating all facilities, implementing new functionality and integrating the voice and data platforms.

INFORMATION TECHNOLOGY PROGRAMS

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SECTION 3
INFORMATION TECHNOLOGY PROGRAMS

3.1 TECHNOLOGY OVERVIEW

Purpose

Fund 104, Information Technology, was established in FY 1995 to strengthen centralized management of available resources by consolidating major Information Technology (IT) projects in one fund. Based on the 1994 Information Technology Advisory Group (ITAG) study, this fund was created to account for spending by project and is managed centrally by the Department of Information Technology. 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 for separately.

The County's technology strategy has several key elements. These are to provide an adequate infrastructure of technology for agencies to use 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 means of providing access to services electronically, expedited response to citizen inquiries, improved operational efficiencies, better information for management decisions, and increased performance capabilities.

FY 2007 Initiatives

In FY 2007, funding of $13,289,576 is included for initiatives that meet one or multiple priorities established by the Senior Information Technology Steering Committee. These initiatives include a mix of projects that provide benefits for both citizens and employees and that adequately balance continuing initiatives with the need for maintaining and strengthening the County's technology infrastructure. Funded projects will support initiatives in the Human Services, Planning and Development, General County Services, and Public Safety program areas. 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 keeping with guidelines established for FY 2007, agencies were instructed that funding for new projects would be considered only if the submission met one or more of the following criteria:

- *Project met one of the five strategic priorities of the Fund*
- *Project considered low cost, short-term and small in scope*
- *Contractual obligations and/or to complete a phase of the existing project*
- *Project must be completed and maintained without additional staff*

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) reviewed all submissions. The project review included identification of projects that provide opportunities for improvement; those that help sustain the performance and reliability of the County technology infrastructure; and those poised to take advantage of technological advancements.

In addition, projects were reviewed from both a business and a technical perspective. On the business side, consideration included whether the implementation of the project would benefit citizens, the County or both. Benefits of the project were weighed against the cost of the project and several risk factors, including the risk of cost and scope escalation due to factors such as the type of technology chosen, organizational disruption, schedule viability and the impact of delaying the project.

On the technical side, factors examined included how closely the project matched, and its impact on, existing County IT infrastructure, and the technical uncertainty of the project as it pertained to the commercial availability of, and the organizational experience with, the proposed hardware, software and resource support. In addition, consideration was given to the availability of human resources both in DIT and the sponsoring agency to staff the project.

Funding Priorities

The Senior IT Steering Committee establishes the funding priorities for technology projects. Beginning 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 ITPAC. A more detailed explanation of the projects within these requirements is provided within:

1. ***Mandated Requirements:*** (enacted by the Federal Government, Commonwealth of Virginia, Board of Supervisors, Court ordered or County regulation changes).

2. ***Completion of Prior Investments:*** (multi-year lease purchase, implements phase or completion of planned project).

3. ***Enhanced County Security:*** (homeland security, physical security, and information security and privacy).

4. ***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-'e-government').

5. ***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).

In FY 2007, funding of $13.3 million is included for initiatives that met the priorities established by the Senior Information Technology Steering Committee. These initiatives include a mix of projects that provide benefits for both citizens and agencies, and that adequately balance new and continuing initiatives with the need for maintaining and strengthening the County's technology infrastructure. Funded projects support initiatives in the Human Services, Planning and Development, General County Services, Public Safety and Court Services program areas.

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 2007.

The established priorities for IT projects for FY 2007 are summarized as follows:

Priority	FY 2007 Adopted Funding
Mandated Requirements	$0.5 million
Completion of Prior Investments	$1.1 million
Enhanced County Security	$1.3 million
Improved Service and Efficiency	$5.4 million
Maintaining a Current and Supportable Technology Infrastructure	$5.0 million
TOTAL	$13.3 million

Mandated Requirements - $0.5 million

The County is responsive to federal and state agencies' mandates, as well as to directives of the Board of Supervisors. Each year, agencies review mandates and directives to ensure compliance. In FY 2007, funding of $222,500 is provided to continue the interface between the financial module of the Department of Housing and Community Development (HCD) management system and the County's financial and procurement systems, ensuring compliance with financial reporting mandated by the U.S. Department of Housing and Urban Development (HUD), as well as incorporate all HCD partnership program financial information on one technology platform and enable project-based reporting as required of all Public Housing Authorities.

Also, $137,715 provides for the infrastructure investments required to implement a strategy to comply with a Board directive to manage the implementation of proffers. This project will ensure that County agencies, the Board of Supervisors and the public have a way to research proffers effectively

and to track their fulfillment as a project progresses. Staff will be alerted when a proffer is due, and will be able to provide accurate and timely accounting of the fulfillment of proffers. Upon project completion, the Department of Planning and Zoning will enter proffers when they are initially accepted and other participating agencies will have a "checklist" of proffers as they are fulfilled.

In addition, funding of $100,000 is included to support the County's telecommuting program in FY 2007. The funding will be used to expand and enhance the County's communication infrastructure to provide increased accessibility for users, while maintaining a stable and secure communications environment. Due to the varied hardware and software capabilities of prospective teleworkers, the County offers dial-up modems, Virtual Private Network (VPN) technology and Citrix servers to meet the various access requirements of remote access and teleworker users.

Completion of Prior Investments – $1.1 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 are funded annually that can be completed within that fiscal year. Others are multi-phase projects that require more than one year of funding to reach completion. Two multi-phase projects are near completion and will be moved from the development phase to the production phase in FY 2007.

Funding of $820,000 will complete the development of a system to replace the obsolete Urban Development Information System (UDIS) and create a cross-functional data repository to better harness the value of the land parcel information the County maintains and making that information more accessible across County agencies. This information includes population and housing unit estimates and forecasts which are used by the County to help determine services and service provision levels, respond to state and federal reporting requirements, and respond to regional initiatives like transportation planning, air quality modeling, and other programs of regional significance. The existing UDIS, an amalgamation of interfaces and reports, had forced County staff to maintain and write software patches for programs that no longer work and supplement missing information through manual intervention. It has exceeded its useful life and is very labor and time intensive to maintain. The new system will have a modern process that captures data regardless of system or format, and will use the County's GIS system as its foundation.

In FY 2007, funding of $285,376 will provide a mobile, wireless field inspections module in the Fairfax Inspections Database Online (FIDO) system for use by Department of Planning and Zoning (DPZ) inspection staff. This will enable them to input data directly from the field and share this data with other FIDO users (i.e., the Department of Public Works and Environmental Services, Health Department, and Fire and Rescue Department) in real time.

Enhanced County Security - $1.3 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 email to homeland security measures. During FY 2007, the County will continue to implement a multi-faceted approach to securing County data and assets.

Funding of $588,517 is provided for the third year of a seven year annual lease-purchase payment for the new Public Service Radio System network infrastructure. The project replaced a 20 year old Public Service Communications System, which provided two-way radio communications for all County non-public safety agencies, as well as the Fairfax County Public Schools Transportation Department (school buses), FASTRAN and Fairfax Water, with updated technology that meets the needs of user agencies. The system provides adequate call processing capacity and area coverage to more than 90 percent of the area within the jurisdictional boundaries of Fairfax County. The FY 2007 project cost is estimated to be $1,688,517 and based on a portion of project costs, derived from the number of radios users will have operating on the system as a percent of the total number of radios, $1,100,000 will be recovered from Non-General Fund Supported agencies, the Fairfax County Public Schools and Fairfax Water in FY 2007.

FY 2007 funding of $500,000 is included as the first phase in a multi-phase effort to replace the existing Police Department disparate information systems with an integrated Police Records Management System (PRMS). The new system will improve the ability to prevent, respond to, manage, and analyze situations threatening the safety and property of citizens. Intelligence led policing, improved criminal justice, and overall strategic public safety resource deployment will be improved upon implementation. Improvement in the

reliability, accuracy, and quality of data will be realized and the system will operate on the principles of "single point of data entry and query" for all functions. The system will expand the capacity of the police department, allowing it to better analyze -- statistically and through geographic-based means -- data on incidents and personnel; it will also aid in identifying trends, and assist in staffing decisions and monitoring departmental effectiveness. The system will integrate with the Computer Aided Dispatch (CAD) system in the Department of Public Safety Communications, ensuring a unified technology platform approach that facilitates the seamless sharing of processes and data across public safety functions and leverages available technologies.

In FY 2007, funding of $225,000 is provided to continue implementation of additional internal network access controls, forensics tools, and applications to quarantine renegade devices and prevent unauthorized use of the County's IT systems. The County security architecture is designed to provide an appropriate level of protection for all County information processing resources regardless of technology platform. Aimed at ensuring the confidentiality of information in an evolving environment, new technologies will be employed to meet current and future security challenges.

Improved Service and Efficiency – $5.4 million

There are several projects funded in FY 2007 that provide for additional improvement in service and efficiency. These improvements are aimed at both external County interactions, such as with residents and the business community, as well as internal County processes, that result in improved results on the provision of direct services.

In FY 2007, funding of $1,730,000 will support the first phase of implementing modern technologies in the new wing of the expanded Courthouse. Funding will support the necessary consulting services and procure the necessary hardware and software needed to outfit a modern day courtroom. These technologies include integrated and mobile evidence presentation, real-time court reporting, wireless access, electronic wayfinding, video conferencing, video arraignment, and judges' control of the technologies from the bench. This project will improve citizen access, internally and externally, to the Courts; facilitate trials and hearings in the most effective and efficient means possible; allow for all three Courts (General District, Circuit Court and Records, and Juvenile and Domestic Relations District Court) to share common resources and provide for flexibility and adaptability to incorporate future changes in technology and court proceedings; and allow the Courts to keep up with the increasing demand and docket backlogs that currently exist.

Funding of $1,351,629 is included to support the development of imaging and workflow capabilities in agencies that have identified an opportunity to provide increased security and integrity of their records; to reduce the labor intensive record retrieval and re-filing process; to expedite workflow processes through an electronic workflow management system; provide simultaneous and instant access to records; and to reduce costs associated with space and shelving for storage of paper requirements. There are two separate initiatives funded in FY 2007 in the Juvenile and Domestic Relations District Court and the Department of Finance.

FY 2007 funding of $552,500 will continue the multi-phase process 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 provide judges and court personnel with a more predictable and manageable workload. Efforts will include creating a Court Schedule Forecasting application that will use cyclical information about the volume of summons to pre-allocate available court dates to Police Officers in order to avoid unmanageable dockets and officer overtime, and the implementation of an Electronic Ticket Writing/Data Entry application to automate the transfer of summons information from the scene to the Police Department and General District Court.

Funding of $475,000 will continue integration of e-government architectures (Interactive Voice Response (IVR), Kiosk, Web, Infoweb, and Wireless) in order to enhance the delivery of information and services, and provide new information and services to citizens. This project will continue to generate economies of scale by providing the needed infrastructure support for the ever-increasing demand for e-commerce/e-government services. Additionally, it will allow for the sharing of data across jurisdictional lines; thereby increasing the scope and value of information and services provided to citizens.

Funding of $411,000 will continue the regular process of updating the aerial imagery and digital orthophotography for the County. The original project to develop the GIS base map for the entire County began in 1996. Annual updates of this data are needed to reflect the changes that have occurred over the years. The current program provides for the update of 25 percent of the County's database each year and allows the County to keep up with the developmental changes and assure users that none of the imagery will be more than four years old. The funding will also continue to support viewing County land in a three-dimensional capacity at County staff desktops in agencies such as the Fire and Rescue Department, Department of Tax Administration, Police Department and Department of Planning and Zoning.

In FY 2007, funding of $300,000 is provided to implement a centralized, web-based participant registration and tracking system at all community centers, senior centers, and teen centers. The current manual and outdated method of registering and tracking participants leads to inconsistent data reporting, participant confusion and complaints, and programmatic disruption. This project will significantly reduce the burdonsome paper registration process that currently exists for the public. Participants will no longer have to wait in lines to sign paper attendance sheets. The centralized information will provide for better and more accurate data reporting and will ensure that confidential participant data is protected.

In addition, funding of $250,800 is provided to support various technology improvements that originated from the Land Development Process Improvement Initiative, a partnership among Fairfax County government, the Northern Virginia Building Industry Association, the National Association of Industrial and Office Properties, and the Engineers and Surveyors Institute. Some of these recommendations include an online capability for Engineers/Developers to review comments online from Site Review in Land Development Services (LDS) and other review agencies. In addition, triggered and automatic e-mails will provide Engineers/Developers notification of site-related plans that have reached certain milestones in the lifecycle of the plan. These changes would expedite the process by which site-related plans are cycled through plan intake, review, and multiple resubmissions.

Funding of $238,000 is provided to modernize the capability for reporting on financial data in the County's financial systems. A Data Analysis Reporting Tool (DART) will replace existing ad-hoc, stovepipe reporting with a unified reporting methodology and capability. Financial information from the County's financial, procurement, and payroll systems will be integrated in a data warehouse, and reporting features will provide the users the capability to generate on-demand charts, reports, inquiries, and analyses.

In addition, funding of $130,000 is included to support the interactive web intake program at the Department of Housing and Community Development (HCD). In March 2004, HCD launched a new Web application giving clients access to services on a 24/7 basis. Currently, HCD collects only enough information through the Web to place its applicants on appropriate waiting lists. There is no capability for applicants to update information, so the process reverts back to filling out dozens of forms and requires time consuming data entry. Furthermore, participants must complete paper-based, annual re-certification packets, including income verification authorizations. This project will automate much of that information, and include the opportunity for clients to apply online in multiple languages.

Maintain a Current and Supportable Technology Infrastructure - $5.0 million

In an ever changing technical environment, maintaining a current and supportable technology environment is a challenge that must be addressed. The County's technological improvement strategy strives to balance the need to pursue existing initiatives with the desire to adopt new industry technology, and previous infrastructure investments with the need to take advantage of newer features and functionality. Various projects are funded in FY 2007 supporting the goal of having consistent, reliable hardware and software, and ensuring that residents, the business community and County staff have appropriate access to information and services via technology.

Funding of $4,495,000 will support the modernization of telecommunications infrastructure which will integrate voice, video and data communications onto a common structure. The multi-year project focuses on replacing the County's network of disparate voice technologies with an infrastructure platform based on current technology and integration into the Institutional Network (I-NET). This will ensure the County's voice, data and video network will meet future needs. This new network architecture will accommodate the projected growth in business applications requirements, and will allow cost savings through standardization and alignment with industry trends.

Funding of $276,539 provides for tactical initiatives which focus on immediate improvements to information technology functions performed in a limited capacity across the County. Efforts in FY 2007 include the expanded use of an automated correspondence tracking product for County agencies and completing the replacement of software used at the County computer help desk.

FY 2007 funding of $200,000 has been included to provide for information technology training and certification in recognition of the challenges associated with maintaining skills at the pace of technological changes and to ensure that the rate of change in information technology does not out-pace the County's ability to maintain proficiency. As the County's workforce becomes increasingly dependent on information technology, training support has become more essential.

3.2 INFORMATION TECHNOLOGY PROJECTS

FY 2007 funding of $13.3 million is included for initiatives that meet the priorities established by the Senior Information Technology Steering Committee. The Senior IT Steering Committee and the Information Technology Policy Advisory Committee (ITPAC) endorses several strategic concepts regarding improved efficiency, effectiveness and service delivery countywide. DIT has informed both the Senior IT Steering Committee and the ITPAC that for the IT modernization program in FY 2007, 57 requests totaling over $28 million were submitted for Fund 104consideration. Of this amount, 26 initiatives totaling $13.3 million are funded. Public Safety initiatives totaling $5.9 million are also recommended in Fund 120 (E-911).

The chart on the following page provides a summary of the IT Project Fund 104 and Fund 120 modernization dollars since FY 2005. The County's IT program continues to address the need to build a reliable, scalable technology foundation that can support IT projects which improve the effectiveness and efficiency of county services. Although investment dollars are currently constrained, it has been highly recommended that the County not fall substantially behind in its IT investment targets and goals that are focused on using technology as an essential tool to enable cost effective delivery of government services. To date the County's investments in technology have allowed Fairfax County to serve a growing population without significant growth in staff positions that would be otherwise necessary just to provide basic services.

A more detailed explanation of these projects is provided within. The five investment policy objectives relate to the County's continuing focus on making access to government services more reliable, secure, and efficient.

Budget ID Number	Project Title	FY 2005 ADOPTED	FY 2006 ADOPTED	FY 2006 REVISED	FY 2007 ADOPTED
FUND 120					
IT0001	Public Safety Communications Network	6,698,934	8,497,796	6,030,683	5,908,579
	TOTAL FUND 120	**$6,698,934**	**$8,497,796**	**$6,030,683**	**$5,908,579**
FUND 104					
IT0002	Human Services Information Systems	92,225	60,000	887,646	0
IT0003	Planning & Development Business Process Redesign	402,674	0	55236	0
IT0004	Geographic Information System (GIS)	618,080	491,180	1,347,544	411,000
IT0006	Tax / Revenue Administration	0	866,930	1,503,496	0
IT0008	Library Projects	0	502,336	616,715	0
IT0010	Information Technology Training	221,817	300,000	313,172	200,000
IT0011	Document Management and Imaging	960,256	1,493,410	6,132,441	1,351,629
IT0015	Health Management Information System (HMIS)	83,304	0	499,326	0
IT0020	Land Records Automated System (LRAS)	0	225,000	1,387,088	0
IT0022	Tactical Initiatives	540,600	850,000	2,125,802	276,539
IT0023	Electronic Data Exchange	0	0	40,766	0
IT0024	Public Access Technologies / E government	500,000	500,000	1,584,621	475,000
IT0025	Adult Detention Center Information System	812,465	697,160	738,156	0
IT0031	MS Office Suite Migration	607,400	0	451,174	0
IT0039	Court Modernization Projects	0	350,000	1,127,716	0
IT0041	Program Conversions and Replacements	0	0	99,374	0
IT0043	Human Resources Information System	0	0	461,956	0
IT0045	Enterprise Technology Center Modernization	0	0	1,530	0
IT0047	Upgrade Commodity/Service Codes	0	0	76,269	0
IT0048	Incident Reporting and Training System	0	0	529,807	0
IT0050	Public Service Communications Replacement	449,930	491,864	4,839,897	588,517
IT0054	SYNAPS	0	0	44,216	0
IT0055	Fairfax Inspections Database Online (ISIS)	1,704,455	520,775	3,398,214	285,376
IT0056	Pilot Courtroom Technologies	250,000	0	313,778	0
IT0057	Community Policing / Technology	0	0	1,500	0
IT0058	Remote Access	150,000	50,000	50,000	100,000
IT0059	Child Care Technology Systems	0	0	652,213	0
IT0060	Telecommunications Modernization	600,000	3,300,000	3,842,000	4,495,000
IT0061	Information Technology Security	1,260,667	450,000	1,110,785	225,000
IT0062	Police Records Management	70,000	300,000	370,000	500,000
IT0063	Facility Space Modernization	100,000	99,208	199,208	0
IT0064	Proffer Database & Status System	188,700	450,168	638,868	137,715
IT0065	Facility Maintenance Management System	792,250	548,750	1,341,000	0
IT0066	Personal Property Tax System	0	0	300,000	0
IT0069	Integrated Housing Management System	0	160,000	160,000	222,500
IT0067	Stormwater Maintenance Management System	0	335,993	335,993	0
IT0068	Home Occupation Permitting System	0	163,800	163,800	0
IT0071	Electronic Summons and Court Scheduling	0	405,000	405,000	552,500
IT0073	UDIS Replacement	0	0	0	820,000
IT0074	Data Analysis Reporting Tool	0	0	0	238,000
IT0075	Participant Registration System	0	0	0	300,000
IT0076	Interactive Web Intake Program Enhancement	0	0	0	130,000
IT0077	Land Development Industry Enhancements	0	0	0	250,800
IT0078	Courthouse Expansion Technology	0	0	0	1,730,000
	TOTAL FUND 104	**$10,404,823**	**$13,611,574**	**$38,146,307**	**$13,289,576**
	GRAND TOTAL: IT PROJECTS	**$17,103,757**	**$22,109,370**	**$44,176,990**	**$19,198,155**

3.3 PUBLIC SAFETY

IT0001.6 CAD SYSTEM ENHANCEMENTS

Project Description

Northrop Grumman, Public Sector Inc. (NG) supports all PRC supplied hardware and installed software under the Computer Aided Dispatch Hardware and Software Maintenance Contract. This contract covers existing CAD equipment and the software applications installed on the CAD System. Enhancements to existing CAD applications that allows revised or additional functionality for the CAD System users is most often dictated by policy or procedural changes, legal implications or other operational requirements that directly impact the applications installed on the CAD System. Additional applications and modifications to existing applications will continue to be necessary throughout the CAD System lifecycle. Potential for new functionality has been made available to improve system performance and provide for additional applications to meet end users requirements through the upgrade of the system hardware. In order to take advantage of this potential, application development or enhancements will ultimately be required. Funding in the amount of $100,000 is provided in FY 2007 for CAD System enhancements.

Project Goals

Additional software applications and hardware devices required to meet the operational requirements of public safety agencies are not provided for under the Northrop Grumman contracts. These items are funded separately as CAD software enhancements. The technology goal is to provide a robust, reliable distributed network for synchronized use of CAD between the 911 center and response units.

Progress to Date

The major CAD system upgrade is in production. On-going system stabilization and tuning, modifications and enhancements to accommodate unanticipated changes to the CAD system are brought about by a host of reasons. In most cases changes are required to meet an agency mandate or are required by changes in law, Virginia Criminal Information Network modifications, or other policy and procedural changes. These modifications are identified when the need arises and are of short project duration from start to finish.

Project Budget

FY 2007 funding of $100,000 is set aside to plan for unanticipated enhancements to the current CAD system due to legislative mandates, interoperability requirements, and the necessary replacement for additional hardware needs.

Return on Investment

The modifications made to the current CAD system through software enhancements provide the end users with a functionality that meets the operational needs throughout the lifecycle of the CAD system. When identified modifications/enhancements are not added to the system as required, the end result is that the user must expend additional man hours seeking information from another source or, in some cases, the inability to meet the legal or operational requirement without the modification to the CAD system.

IT0001.13 PUBLIC SAFETY SUBSCRIBER

RADIO REPLACEMENT

Project Description

This project consists of the on-going phased replacement of all digital two-way radios in use by the Fairfax County Police Department, Fire and Rescue Department, and Sheriff's Department. Portable (handheld) radios in a public safety environment are estimated to have a service life of five years. Many of the County's public safety portable radios were placed in service in 1998 for the Sheriff's Department and specialized units of the Police Department. Mobile (vehicle-installed) radios in a public safety environment are estimated to have a service life of 7 years; most of these units were placed into service in 2000.

Project Goals

This project is intended to provide for continuing lifecycle replacement of radios assigned to the Public Safety agencies of the County of Fairfax. Funding will be requested to replace 500 portable digital radios for each fiscal year beginning in FY2004 (based on the five-year lifecycle for public safety portable radios) and an additional 500 mobile digital radios beginning in FY2006 (based on the seven-year lifecycle for public safety mobile radios), and is anticipated to be a continuing request in each subsequent fiscal year. In addition, a small number of the replacement radios will be equipped with an encryption coding feature, preventing communications between specialized public safety groups to be monitored by digital scanners now available to the general public.

Progress to Date

The initial phased replacement of the first 500 portable public safety radios took place in FY2004, and the second round of 500 replacements portable radios were procured in FY2005. This will be a recurring annual life-cycle replacement of a portion of the County's public safety subscriber radio units. An accelerated replacement is necessary to remain synchronized with radio system upgrades in neighboring jurisdictions supporting mutual aid operations.

Milestones

- *Refresh for all radios in use by the County Fire and Rescue Department completed, FY 2006.*
- *Replacement of 50% of the remaining older radios in use by the Fairfax County Police Department and Office of the Sheriff, FY 2007.*

Project Budget

Communications coordinators from the Police Department, Fire and Rescue Department, and Sheriff's Department will assist DIT/Project staff with the specification and quantities of replacement subscriber radio units. Agency staff will be fully responsible for deployment of replacement units within their respective agencies, or for coordination of scheduling the availability of agency vehicles for mobile-mounted radio units. The FY2007 project cost is estimated at $3,523,500 to purchase the fourth-year of a five-year replacement cycle for portable radio replacements and the second year round of mobile radio replacements for the Police and Sheriff's Departments.

Return on Investment (ROI)

The return on investment for this system replacement will result from the enhanced reliability and coverage that will be obtained. The replacement system will provide reliable radio coverage to many areas of the County that are not covered by the current radio system. In addition, the completed system will be fully compatible with the mobile and portable radios used by the County's public service radio system.

IT0001.14 MOBILE COMPUTER TERMINAL LIFECYCLE REPLACEMENT

Project Description

The Computer Aided Dispatch Mobile Computer Terminals (MCT's) installed in police, fire and rescue, and selected sheriff unit vehicles has a life expectancy of no more than five years effective use. This project provides for the incremental replacement of the MCT's installed in the public safety fleet. Rather than bear the burden of replacing the entire fleet at once, the County elected to initiate a lifecycle replacement over a period of five years, replacing 20% of the fleet per year for five years. The first year replacement cycle was budgeted and funded in FY 2003 with subsequent funding provided to continue the incremental replacement cycle in the following fiscal years.

Project Goals

The goal for this project is to establish and maintain an effective lifecycle replacement of the Mobile Computer Terminals installed in the public safety fleet. Many of these units are utilized 24 hours per day/7 days per week and as such cannot be expected to continue effective operation beyond five years. Additionally, the average technology refresh standard for business use occurs every three to four years and therefore, a five year replacement cycle exceeds the industry standard. Effective use of mobile equipment beyond five years cannot be expected. Maintenance fees for older equipment will escalate during the three to five year lifecycle of the MCT's and beyond five years maintenance for these units may not be obtainable.

Progress to Date

The project plan schedules installation during FY 2006 and into FY 2007.

Milestones

- *Initiate contracts and purchase orders, July 2006*
- *Equipment shipped and staged for installation, September 2006*
- *Equipment installed with necessary wiring; system integration, December 2006*
- *Testing of equipment; begin use of new equipment, December 2006*

Project Budget

FY 2005 funding in the amount of $2,215,000 was allocated for the purchase and installation of the mobile data computer equipment. Onsite vendor and County staff will perform integration and installation of the equipment into existing systems. No additional funding was provided in FY 2006. Funding for FY 2007 in the amount of $1,315,000 is provided to complete the first replacement cycle.

Return on Investment (ROI)

Historically, spare parts for MCT equipment older than five years is not obtainable or are scarce in number. The units begin failing at a high rate and the spare equipment complement is rapidly depleted and replacement spares are no longer available. When this occurs, public safety vehicles are left without access to the Computer Aided Dispatch system and must rely on the voice radio system for all communications. This increases the levels of radio traffic that a dispatcher must control. As the number of units relying on voice traffic increases so must the number of dispatchers handling the radio frequencies increase. Total reliance on the radio system adds increased burden on the dispatch staff at the PSCC and adds to saturation of the voice frequencies. MCT use allows the officer/firefighter to run many of their own queries and to receive and send messages without dispatcher intervention. Loss of this capability results in the PSCC having to perform these functions for the field personnel in addition to their already heavy workload. This increased burden on the dispatcher eventually results in the need to add additional dispatch staff to handle the workload. Additional staff for the PSCC can only be accomplished through overtime and therefore the overtime budget for the PSCC will increased each time an additional dispatcher has to be added.

IT0001.15 ALTARIS MAPPING REPLACEMENT PROJECT

Project Description

This project upgrades the Altaris Mapping System hardware and software to take advantage of new functionality available for mapping systems. Mapping workstations are currently used by the call taker and dispatch staff at the DPSC to display a fixed point reference for events occurring throughout the County. They display all event activity that is currently active on a map display and assist the staff with identifying the approximate location of dispatched units, not the actual location of the unit. Only event locations are currently displayed. Units are not tracked during their travels throughout the County. The workstations are old technology based on older Pentium I technology with limited memory and hard drive capacity and have outlived their normal lifecycle. Newer technology and software allow for tracking and deployment of resources, including personnel using a closest available response approach instead of fixed point on the map recommendation.

Project Goals

The goal of this request is to replace older outdated hardware devices currently in use at the PSCC for mapping functions and to enhance mapping capabilities to provide a host of additional information to the dispatch and call taking staff at the center.

Progress to Date

This is a new project which will begin and be completed in FY 2007

Milestones

- *Initiate contracts and purchase orders, July 2006*
- *Equipment shipped and staged for installation, September 2006*
- *Equipment installed with necessary wiring; system integration, December 2006*
- *Testing of equipment; begin use of new equipment, January 2007*

Project Budget

In FY 2007, funding in the amount of $750,000 is funded for this project.

Return on Investment

The primary return on investment for this project is operational integrity, optimal productivity, continuity of services and timeless of response for of the Department of Public Safety Communication's (DPSC) Mapping Display system. The currently technology is obsolete and overdue for replacement. The technology is old and repair parts are not easily available to ensure its continued operations. The project will mitigate the risk of increased failures with the mapping workstations and eventual inability to use mapping capability in the DPSC.

The DPSC will also be able to take advantage of new applications in mapping including full unit and event display activity enabled through interfaces to the CAD system. Dispatchers will be able to track units more accurately as they move about their assignments. Additional mapping information will also be able to be displayed to the dispatch staff and call takers at the DPSC including cell phone location information, best route of travel information, "pathfinder" direction information, etc. that proves effective in the rapid deployment of appropriate resources to emergency events.

IT0011.5 JDRC ELECTRONIC RECORDS MANAGEMENT SYSTEM

Project Description

Juvenile and Domestic Relations District Court is in the process of implementing a multi-phase work-flow and document management system that will allow the Court to replace traditional paper-based case files and manual court case processes with electronic court case records and automated workflows 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, workflow, electronic forms and enterprise application integration (EAI) tools. This project provides continued funding for the Juvenile and Domestic Relations District Court's planned multi-year implementation of an Electronic Records Document Management System. This document management system, which will be developed using the Documentum Enterprise Content Management system, 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 the 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 the labor intensive and time consuming record retrieval and re-filing process, expedite workflow processes through an electronic workflow management system for court documents, provide simultaneous and instant access to court records, reduce costs associated with space and shelving for storage of paper documents, provide means of safeguarding documents with an electronic backup of court records.

Progress to Date

The design for the first module has been completed and is undergoing build. There will be an Informal Hearing/Diversion pilot implemented at the end of the 3rd quarter of FY 2006 after testing and training take place. Functionality enabled in this pilot will include electronic document storage in case file format, workflow, form creation, scanning/scanned data routing, and enablement of electronic signatures. The creation of the baseline infrastructure is also in progress. The infrastructure will house the various environments for testing, training, acceptance, staging and production. Once the base system is complete and the pilot has been launched, development will continue on the remainder of Phase I.

Milestones

- *Requirements Analysis and Definition, January - December 2004*
- *Design Phase, April - July 2005*
- *Build Phase, August - October 2005*
- *Testing Phase, April - September 2005*
- *Training, September - October 2005*
- *Phase 1 deployment, January - May 2006*
- *Subsequent phases roll-out, FY 2006*

Project Budget

FY 2007 funding of $821,229 will complete the first phase of the project and complete the functional requirements for the second phase of the project. At the completion of Phase I, all court processes, including documents and workflow, from intake or case initiation through the final court hearing will be automated. Electronic legal folders will be created, and all legal documents such as petitions, affidavits, attorney appointment, summonses, subpoenas, motions, and court ordered reports will be placed in the folder as part of the automated workflow. The electronically created court orders will send notification of order of services to all court service units such as probation, restitution, community service, detention, etc. Fine and cost orders will be immediately available at the public counter so citizens can be immediately served after the court hearing rather than waiting for paper documents to be brought from the courtroom to the counter. The first phase will also automate workflow and documents for the probation department's social folders which are mandated by the Department of Juvenile Justice. Once these documents are electronic and available for viewing across the system, other court staff involved in the case will have access to the documents.

Phase II will provide Integration with the Department of Juvenile Justice's Juvenile Tracking System (JTS) for transmission of intake information from JTS into ERMS to reduce redundant data entry for court staff, and integration with the Supreme Court's Case Management System (CMS) for transmission of data associated with docketing and dispositional information reducing double data entry. It will also add the e-filing component which will allow other county agency staff such as DFS, county attorneys, CSB to file court documents electronically, and allow the citizens and attorneys to file electronically. Currently, all parties filing court documents must come to the courthouse to file.

Return on Investment (ROI)

Funding this project will reduce staff time spent in locating missing files, and in 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 for overflow storage and in will reduce the amount of storage space required in the new, expanded courthouse. It will expedite the response time to internal and external customers at the Records and Fines and costs counters, and it will provide easier and more efficient public access to court records.

IT0020 LAND RECORDS AUTOMATION SYSTEM

Project Description

The Clerk's Office of the Fairfax County Circuit Court is responsible for providing Fairfax County citizens with reliable, timely, and accessible public records. The Land Records and Public Services sections of the Circuit Court identified numerous deteriorating land-related documents, which were repetitively accessed by the public and were constantly exposed to light, photocopying, fluorescence, and handling stresses. In an effort to preserve these documents, the Clerk's Office converted these documents to a more robust and stable medium. To date, more than 28 million images have been digitally scanned and their associated indexes have been indexed and loaded into a document storage and retrieval system, thereby maintaining the integrity of the documents and providing more convenient access to the public.

In addition to the need to preserve documents dating from 1742, low interest rates and related increased real estate activity have created substantial workload increases in recording and maintaining these documents. County agencies such as the Department of Tax Administration (DTA), Department of Information Technology (DIT) and the Department of Public Works and Environmental Services (DPWES), as well as mortgage companies, law firms, private citizens, banks, and other organizations, such as VDOT, need to obtain information from land recordings. The time-consuming, labor-intensive methods used to record, maintain, store, and view these documents have been streamlined into a state-of-the-art capture and retrieval process available to the public nearly 24 hours per day, seven days per week.

Project Goals

The purpose of this project enhances and converts land-related documents to electronic images for preservation and to prevent further deterioration. An imaging system has been designed that eliminates or reduces previous labor intensive manual recording processes by automating these processes; reduces duplication of effort, facilitates coordination of the transfer of information to the Department of Tax Administration and other county agencies; and, provides a faster, more accurate means to access these records by the public. Lastly, the project enables certain groups determined by law to electronically file documents, which will create greater efficiencies for land professionals, citizens, and staff.

Progress to Date

Beginning in 1995, on the recommendation of the Department of Management and Budget (DMB), the Clerk's office completed a Business Process Redesign that resulted in recommendations for process modifications that would improve service to internal and external customers. To date, over 26,000,000 images (and their corresponding indexes) dating from 1742 to current day have been captured and stored by the Court Automated Recording System (CARS) system and are available online. This represents 6,500,000 documents available for retrieval.

Phases 1 through 4 have been completed and are operational. The loading of back-file data by Circuit Court staff began during phase 1 and continues to present in an effort to provide the public with a single media with which to conduct research. The Land

Records back-file was completed and is successfully being utilized in the Courthouse by staff, public, and real estate and land professionals, and is being utilized remotely by more than 420 subscribers to the Court's Public Access Network (CPAN), as well as over 50 Circuit Court users and 150 users from other County agencies. Users access land and land-related documents dating from 1742 to the present. Subscriptions to CPAN continue to grow. Non-land record back-file continues to be loaded.

Phase 2 added the capability for Circuit Court personnel to scan, index, and store for electronic access all land record documents processed during FY 2000 and beyond. Phase 3 included the addition of such non-deed documents as judgment abstracts and notices, marriage licenses and financing statements to the library of materials available to perform title searches on land in Fairfax County. In FY 2001, Phase 4 was successfully implemented and allows Land Records staff the ability to improve productivity and responsiveness to Court customers who place land documents on record, and to increase the back-file data available for online retrieval. A full 60-year search of land documents is available. Other improvements include the scanning of documents at the start of the recording process, and an enhanced cashiering application integrated into the automated capture workflow process.

In addition, an electronic filing prototype involving the transfer of certificates of satisfaction and the Automated Clearing House (ACH) transfer of funds was completed. Partners in the project, the Circuit Court and Fannie Mae filed certificates of satisfaction and transferred funds electronically in less than 60 seconds using a system provided by a vendor. Final testing of data and placement of equipment occurred in January 2002. The project went live on January 25 with Navy Federal Credit Union as the sole electronic filing customer, due to constraints in Virginia law. In July, 2003, legislation was passed allowing other known parties to participate in electronic filing. Currently, there are ten companies that can submit recordings electronically. In calendar year 2003, almost 10% of all mortgage releases were processed electronically. Additionally, staff efficiencies and public retrieval improvements are being realized through the expedited recording process. The Circuit Court is currently working on an initiative to create its own electronic filing system that will process all document types at a lower cost to the customer. With the development of this system it is possible that half of all land recordings will be filed electronically within a 5 year period.

Milestones

- *Requirements Analysis and Business Process Redesign, 1995*
- *Phase 1- back file data, completed 1999*
- *Phase 2* - scan, index, and store for electronic access all land record documents processed during FY 2000 and beyond, completed 2000
- *Phase 3* – addition of non-deed documents (judgment abstracts and notices, marriage licenses, financing statements), completed 2000
- *Phase 4* - allows staff the ability to improve responsiveness to Court customers who place land documents on record, completed 2001
- *Phase 4* - increase the back-file data available for online retrieval, completed 2001
- electronic filing prototype involving the transfer of certificates of satisfaction and the ACH transfer of funds, completed 2002
- creation and implementation of electronic filing system, 2007

Project Budget

FY 2006 funding of $225,000 will provide for the purchase and completion of system components required to obtain system functionality, equipment refresh, and data storage expansion needed to meet expected growth. Specifically, funding will provide efficient correction functionality, enhanced search capabilities for judgment and Land Records documents, and interfaces with a case management system. In addition, $373,725 in anticipated State Technology Trust Funds will be used to supplement the overall equipment refresh and enhanced functionality for the reporting, cashiering, image correction, and web retrieval areas of the LRAS system.

Return on Investment (ROI)

The enhanced system will ensure the integrity of the information captured and provides a means to correct errors as they occur. The system will also provide added functionality to search for and correct errors that occurred in documents recorded in the previous land record's system. Benefits of this project include enhanced retrieval and administration of Circuit Court records which will improve operational efficiency and customer service. In addition, the imaging system is designed to eliminate or reduce existing labor-intensive manual recording processes by automating as many of these processes as possible, reducing duplication of effort, and coordinating the transfer of information to the Department of Tax Administration and the Department of Public Works and Environmental Services.

IT0025 ADULT DETENTION CENTER INFORMATION SYSTEM

Project Description

The Sheriff's Information Management System will provide improved functionality for booking, prisoner classification, medical, forensics, inmate programs, community corrections, court services, and administration information needs. In addition, the agency will be better able to meet information exchange requirements mandated by the Virginia State Department of Corrections and State Compensation Board. It will provide new capabilities in areas including visitor tracking, inmate restrictions and discipline, agency-wide event reporting, inmate referrals, community corrections and courts services. Data entry redundancies across the present systems will be eliminated. The new system will support improved information sharing with other criminal justice agencies including the Police Department, Circuit Court, General District Court, Commonwealth's Attorney and other agencies.

Project Goals

The goal of this project is overall modernization of automated systems that support operations of the Sheriff's Office, including replacement of the 25 year-old Adult Detention Center Information System, modernization of the Sheriff Services System, and development of an inmate programs management information system. Although the project was originally conceived as a COTS acquisition, the RFP process did not result in an affordable solution that met the projects functionality requirements without significant customization.

Progress to Date

This project was planned as a multi-year implementation. The requirement analysis was completed in November 2000 and release of the Request for Proposals occurred in January, 2001. The RFP process did not result in an affordable solution that met the projects functionality requirements without significant customization. Due to the extensive customization needs required and the proposals exceeding available funding for the project, the decision was made to undertake the project as an in-house development effort. During 2002 and the beginning of 2003, additional requirements were defined to initiate and the Administrative Maintenance Tool for SIMS, was designed and programmed. In October 2003, the visiting module of SIMS was implemented and rolled into production. Detailed design and programming for the core application is nearing completion and is expected to be implemented in April 2006.

Milestones

- *Complete Sheriff Inmate Program module, February 2002*
- *Complete Risk Analysis and Proof of Concept for architecture alternatives, April 2002*
- *Complete modernization of Sheriff Services System, June 2002*
- *Begin Requirements Documentation for Booking, Inmate Records, Classification and Confinement, March 2002*
- *Design and code SIMS Administrative Tool, May 2003*
- *Implement SIMS Administrative tables, October 2003*
- *Requirements documentation for Booking, Inmate Records, Classification and Confinement, July 2003*
- *Data Identification and conversion planning, August 2003 - February 2004*
- *Implement Visiting Module, June 2004*
- *Migration programming, February 2004 - March 2006*
- *Design and code SIMS core module, February 2004 - February 2006*
- *Design and code enhancements to core SIMS, February 2006 - June2006*
- *Test and Train, June 2006 - July 2006*
- *Implement Core SIMS modules August 2006*
- *Complete requirements confirmation process for 108 Reporting and Inmate Discipline, Nov 2006*
- *Program 108 Reporting and Inmate Discipline, November 2006 – March 2007*
- *Test and Train 108 Reporting and Inmate Discipline, March –May 2007*
- *Implement 108 Reporting and Inmate Discipline, May 2007*

Project Budget

FY 2006 funding of $697,160 was expected to complete the Sheriffs Information Management System (SIMS); however, additional funds of $220,000 were contributed by both DIT and the Sheriff's Office. This project will be completed using existing staff resources augmented by contract programming staff and consultants for specialized requirements funded through the IT Fund 104. This project also is expected to continue supporting enhancements to the positive identification project.

Return on Investment (ROI)

The benefits of an integrated system include reduced operational costs, migration of aging legacy systems to a modern database, improved integration of criminal justice system and agency data, decreased reliance on preprinted forms and photocopies, and improved access to information for decision making. The benefits cannot be obtained with the current technologies and applications in place. Data will only be entered once at the point of contact. The streamlining of business processes and the elimination of standalone databases will be achieved by integrating the modules of the system. Other business process improvements will result from integration between the Adult Detention Center inmate data and the Pre-Release Center inmate data.

Cost savings will be achieved from eliminating data entry redundancies existing between numerous small Access and Excel databases, and other organizational units within the jail and other agencies in the criminal justice system. Also, savings will be achieved by providing public access to data in appropriate cases such as on-line inmate inquiry, thereby eliminating significant call-taking responsibility by booking deputies and providing customers direct access to data. The non-quantifiable benefits will enable all divisions within the Office of the Sheriff to leverage data entered by other divisions for their unique business needs, reducing redundancy in data entry and eliminating paper processing steps in present operations.

IT0039 COURT MODERNIZATION

Project Description

This project involves court-wide implementation of a commercial-off-the-shelf (COTS) case management system with specific modifications for Fairfax Circuit Court. The FullCourt case management system encompasses the civil, criminal and financial areas of case management. Phase I implementation has allowed the Circuit Court to begin utilizing enhanced functionality for numerous processes which involve various levels from the Chief Judge to administrative court staff. Needed flexibility with regard to data table maintenance for areas such as statutes, fees and case types, along with added functionality for preparation of orders, reports and notifications is now available through FullCourt. During the 4th Quarter of FY2005, the Circuit Court began to provide enhanced remote access to the Court's case records through FullCourt CPAN.

Phase II is positioning the Circuit Court to pursue full-scale case file imaging and e-filing. This phase will include an initial small-scale integration of imaging, including simple workflows, in late FY2006. In addition, the court anticipates completion of interfaces to facilitate civil and criminal court case e-filing and the sharing of crucial case information with county and state agencies during FY2006 and FY2007. The availability of court case images will allow individual case files to be viewed by multiple users in different locations simultaneously providing quicker and improved service to in-house, county and state agencies and public users.

Project Goals

In Phase II, the Circuit Court will finalize the foundation for a subsequent E-Court project to include E-forms and E-filing of court case documents by identifying, developing and implementing court-wide imaging and in-depth workflows using FullCourt with document imaging. The resulting availability of additional specific online case information through FullCourt's Oracle database and availability of document images will significantly enhance case processing and will reduce the need to frequently retrieve files for viewing thus limiting the exposure of original case file documents to loss and unauthorized alteration. Additionally, the Circuit Court expects reduced case file storage space and duplication requirements through use of imaging and e-filing.

Progress to Date

The project to expand use of FullCourt beyond it limited use in the Court's Differentiated Case Tracking Program was delayed during FY2002 in anticipation of putting out an RFP seeking a new COTS case management system. However, late in FY2002, the Circuit Court determined that an upcoming FullCourt upgrade would make many of the desired case management system features available or easier to accomplish. The newly offered site license for version 4.0 of FullCourt was purchased in FY2003.

The FY2005 Phase I implementation of FullCourt has enabled the Circuit Court to begin realignment of staffing for coverage in critically understaffed areas

through the elimination of duplicate data entry in the Differentiated Case Tracking Program. Court-wide use of FullCourt is enabling the Circuit Court to deal with previously cited legacy system deficiencies.

The Phase II FY2006 implementation of the General Ledger module is a further step toward full compliance with Virginia financial audit tracking requirements. In addition, FY2006 completion of a crucial interface with the Division of Motor Vehicles will lessen the current processing burden. Also, early FY2006 completion of a FullCourt interface with InFax, as part of the Courtroom Technology Electronic Wayfinding project, will provide state-of-the-art electronic docket displays for those coming to the Judicial Center for Circuit Court case proceedings. The anticipated FY2006 introduction of imaging will result in better utilization of staff time, increased document availability and improved safekeeping for critical court case documents.

Milestones

- *FullCourt Version 4.0 site license procured, April 2003*
- *Initial server hardware delivery and installation, September 2004*
- *Software modification, testing and acceptance, September 2004*
- *Training and implementation, October 2004*
- *Initial availability of FullCourt CPAN for remote users, June 2005*
- *Implementation of General Ledger module, February 2006*
- *Modification, testing, acceptance and implementation of DMV and Infax interfaces and imaging and workflows, February 2006 through June 2006*
- *Imaging hardware delivery and installation for initial imaging, June 2006*
- *Modification, testing, acceptance and implementation of Sheriff's Office and other state and county interfaces, Late FY 2006 or Early FY 2007*

Project Budget

FY 2006 Fund 104 funding of $350,000 was provided to implement Phase II of the Circuit Court's Court Modernization project which includes court-wide integration of an imaging module with the FullCourt case management system software. An e-filing interface and process workflows with interfaces between FullCourt and other county and state agencies will also be developed with an anticipated implementation during late FY 2006 or early FY 2007.

Return on Investment (ROI)

Enhanced report preparation capabilities, comprehensive financial management, expanded online information available to multiple users, and customizable information that can be maintained by Fairfax County Circuit Court staff are all major benefits of the project. The addition of the imaging capability will greatly enhance the Court's ability to streamline the processing of case information thus having a substantial impact on the majority of the Court's procedures and workflows. Also, preservation of critical case records will be significantly improved through the availability of imaging. The imaged court case documents will be more secure while reducing file storage space requirements.

Phase II of the Court Modernization project is resulting in significant benefits in financial areas and beyond. The financial audit trail provided by the FullCourt General Ledger module should result in more favorable reviews from the Virginia Office of the Auditor of Public Accounts. The benefits from this project will be found in increased staff effectiveness through availability of added information and enhanced functionality. The extensive benefits of the many improvements to procedures and workflows available through this Court Modernization project will be realized over a period of several years.

IT0048 FIRE AND RESCUE INCIDENT REPORTING AND TRAINING RECORDS

Project Description

The Fire and Rescue Department has completed two of three major system development initiatives. In FY 2005 the replacement of the fire incident reporting program was completed. This enables the Fire and Resuce Department to comply with the National Fire Prevention Association (NFPA) coding requirements within the National Fire Incident Reporting System (NFIRS 5). In FY 2006 the Fire and Rescue Department completed implementation of a fire data warehouse. The Data Warehouse was designed to reduce FRD staff time in analyzing records from an ever increasing database associated with fire and medical emergency incidents. The Fire and Rescue Department participates in many nation-wide surveys such as the International City/County Management Association (ICMA) Performance measurement Survey, FireHouse Magazine, National Fire Protection Agency, and Council of Government's surveys. The department also responds to Board of Supervisors inquires, requests from citizen groups and County performance measurements. This solution will provide data access services to browse through records and standardize reporting in response to these national, regional and administrative studies.

In FY 2007 work will begin on the third major system development initiative, the Emergency Medical Services Incident Reporting (EMSIR) system. This system will enable 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.

Project Goals

The EMS patient care reporting requirements are the focus of EMS Incident Reporting. Funds in the amount of $3,162,881 have been transferred from the agency operating budget to the Technology Fund to support this project. System procurement is part of a multi-system replacement project called Public Safety Architecture Modernization, which will result in the replacement of the current Computer Aided Dispatch System, Altaris, as well as the legacy Police Records Management System and the implementation of a field-based EMS Incident Reporting System.

Progress to Date

Data Warehouse was completed in FY 2006. No additional funding was required in FY 2006. No new funds are required in FY 2007, but the funding has been transferred to Fund 104 for management and oversight as a technology project.

Milestones

- *Phase I & II completed, October 2004*
- *Data Warehouse completed January 2006*
- *EMS Incident Reporting solicitation, April 2006*
- *EMS Incident Reporting Vendor Selection, December 2006*
- *EMS Incident Reporting Contract Negotiation, March 2007*

Project Budget

Staff will consist of Fire and Rescue Department Information Technology Section and selected Operations staff. Department of Information Technology staff will provide support for technical aspects for the CAD interface and other issues. EMS Incident Reporting project costs consist of consulting services, programming, training, software licenses, and hardware. FY 2005 carryover funds will be used for procuring the software and services for development. No additional funding will be allocated in FY 2007.

Return on Investment (ROI)

Funding this project allows the Fire and Rescue Department to comply with National Fire Protection Agency coding requirements and the Virginia EMS mandated reporting requirements. Phase III allows the Fire and Rescue Department to achieve many agency objectives in responding to data requests and realize a cost savings of staff time. In addition the EMSIR system will support the ambulance billing function and enable EMS field personnel to accurately record patient care information in a real time manner, and effectively exchange patient care information with hospital based providers. The overall project will improve the quality of data, the management of data and statistical analysis. This project will also improve decision making capabilities such as placement of new fire stations, resource/apparatus standards and improved pre-plans for Operations.

IT0056 COURTROOM TECHNOLOGIES

Project Description

The courtroom technology prototype project is a cooperative effort of the three Fairfax Courts; Circuit Court, General District Court, Juvenile and Domestic Relations District Court, the Office of the Sheriff, and other County agencies; Department of Management and Budget (DMB), Department of Cable, Communications and Consumer Protection (DCCCP), Department of Information Technology (DIT), Department of Public Works and Environmental Services (DPWES), to identify, implement, and test courtroom technologies considered appropriate for the expansion and technological operations of the courts. These technologies include integrated and mobile evidence presentation, real-time court reporting, wireless access, electronic wayfinding, video conferencing, video arraignment and judges' control of the technologies from the bench. The Courtroom Technology project will advance the recommendations provided in the master plan and, with assistance from the Courtroom 21 Project associated with the College of William and Mary Law school, develop a working prototype to further refine and assess these technologies in a live, courtroom environment, and to gain the insight and experience from those that will be involved with using and depending on these technologies on a regular basis; judges, attorneys, court

Project Goals

This project will develop a working prototype courtroom to use as a model for future courthouse expansion and renovations to determine and assess courtroom technology needs and requirements. The main objectives seek 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.

Milestones

- *Organization of Courtroom Technology Team, January 2004*
- *Establish contract with Courtroom 21, April 2004*
- *Courtroom 21 draft presentation, June 2004*
- *Courtroom 21 final presentation and report, July 2004*
- *Purchase and procurement of recommended technologies, November - December 2004*
- *Installation and testing of equipment, January - June 2005*
- *Working prototype in place, June 2005*
- *Testing and evaluation, January 2006 – June 2006*

Progress to Date

The hardware implementation for the prototype courtroom was completed in June 2005. Additional efforts are on-going to reprogram and provide remote capabilities from within the courtroom to external sites for remote testimony and video arraignment capabilities. This project will be completed in FY 2006. No additional funding is required.

Project Budget

FY 2005 funding of $250,000 will support consulting services and the procurement of the necessary hardware and software needed to develop a prototype courtroom, and to better determine the costs associated with accommodating future courtroom technology infrastructure in more than 40 new and existing courtrooms. The costs associated with renovating and retrofitting courtrooms will be substantial and needs to be determined prior to construction of the expanded courthouse. DIT leads a team comprised of staff from the three courts and supporting agencies that work collaboratively on this effort.

Return on Investment (ROI)

Improved service and efficiencies are expected to be realized in future years when the expansion of the Courthouse is completed. The primary benefit will be for future planning purposes by researching and documenting the future benefits of the selected technologies, ensuring that the final investments in courtroom technology are appropriate, fully accepted and will improve the efficiency and effectiveness of judicial proceedings. This project will help determine the costs to acquire courtroom technologies in multiple units for the courthouse expansion project.

IT0062 POLICE RECORDS MANAGEMENT SYSTEM

Project Description

This project includes two dimensions, ensuring continued performance of the existing legacy Police Records Management system (PRMS) and its components (legacy asset protection efforts), and taking initial steps toward replacing the legacy PRMS (Public Safety Architecture Moderization initiative). In prior years, efforts within the Police Department included the development of a graphical user interface (GUI) and the Universal Name Information System (UNIS) module for the existing Police Records Management System (PRMS). The PRMS upgrade continues with the development of a browser-based GIS mapping component and crime analysis tool. Also, in FY 2005, funding was provided to automate the Police Evidence Section, which is responsible for the cataloging, storage and security of all evidence collected by the Police Department.

The GIS mapping component of this project will automate the compilation and analysis of data and ensure reliable information is readily available to be accessed by the public from the Internet. As part of this update of the Police Records Management System, a system was created to facilitate the in-depth analysis of crime data captured with the development of the Law Enforcement Analytic Data Sharing (LEADS) application

The Property and Evidence Management System (PEMS) will replace the existing the existing mainframe application. PEMS will utilize Barcode and RFID technology to track the collection of property and evidence from the initial receipt to the final disposition. PEMS will utilize existing County programs such as the Exchange Server for officer notification, Automated Field Reporting for accurate data entry and Altaris for case verification.

In addition, the Police Department is in the procurement phase of a replacement to the existing legacy records management system. System replacement is part of a multi-system replacement initiative called Public Safety Architecture Modernization, which will result in the replacement of the current Computer Aided Dispatch System, Altaris, as well as the legacy Police Records Management System. There are also components of this modernization initiative that affect the Fire and Rescue Department. Funding in the amount of $500,000 has been included in the FY 2007 budget.

Project Goals

The goals of the GIS mapping and LEADS applications are to provide information to the public, through the "My Neighborhood" portal on the County's public web side, that will give them a better understating of crime and police activity in specific neighborhoods and better equip community groups to be aware of crime trends. LEADS will also provide a tool for police officers to identify trends in criminal activity, conduct predictive analyses and provide information that will assist in decision making regarding resource deployment.

The Property and Evidence Management System will purchase and install a COTS barcode evidence tracking database system that will generate a barcode label for every item of evidence presented for storage. Each item will be logged into the database with identifying data elements such as case number, description and officer name. Application features will include e-mail reminders to officers to retrieve evidence when it is released as well as reports identifying the status of all evidence in the Property Room. Barcode readers can be used to inventory the evidence to perform audits of evidence management practices.

The procurement of a replacement system for the legacy PRMS is part of a multi-system replacement initiative called Public Safety Architecture Modernization, which will result in the replacement of the current Computer Aided Dispatch System, Altaris, as well as the legacy Police Records Management System and the implementation of a field-based EMS Incident Reporting System.

Progress to Date

The LEADS project has completed the purchase and initial installation of the IBM WebSphere Information Integrator software on the mainframe and distributed platforms. The installation is currently undergoing the installation verification process on both platforms and is 90% complete.

The PEMS RFP selection process will be completed by the end of FY 2006 and the implementation will follow in FY 2007.

An integrated CAD/RMS solution will be selected during FY 2007 and a gap analysis will be performed

to determine the extent to which the COTS solution will meet Police Department needs.

Milestones

GIS Mapping and LEADS

- Final technical design approved – January 2006
- Installation of development tools – February 2006
- Application development – February/March 2006
- Testing and Training – April/May 2006

Property and Evidence Management System:

- Release RFP – February 2006
- Select vendor and award contract - April 2006
- Initial installations and training – June/July, 2006
- Final installation – March 2006

Records Management System Replacement (Public Safety Architecture Modernization)

- *Records Management System solicitation, April 2006*
- *Records Management System Vendor Selection, December 2006*
- *Records Management System Contract Negotiation, March 2007*

Project Budget

In FY 2005, funding was provided to automate the Police Evidence Section, which is responsible for the cataloging, storage and security of all evidence collected by the Police Department. In FY 2006, additional funding is provided to automate the current manual crime analysis process and make Fairfax County crime and police activity data available to the public on the Police Department's website. Funding allocated in FY 2007 will provide consulting services, software licenses and training for project start-up.

Return on Investment (ROI)

By automating the current manual crime analysis process, the implementation of the GIS mapping and LEADS applications will free up police officers to analyze, report and detect crime trends rather than entering information into the system manually and creating reports. Crime data will be readily available to assist in decision making regarding resource deployment, identify trends, conduct predictive analysis, address community concerns and provide selected information to the public. This will support community policing by enhancing the close, interactive relationship between officers and community members working toward the goal of reducing crime and its effects with mutually supported problem-solving remedies in a partnership role. Crime Analysis will play an important role in this approach by making citizens aware of what is occurring in their neighborhoods.

The return on investment for the Property and Evidence Management System is two-fold. The new system will enhance property and evidence tracking, reducing the risk of lost, improperly released or improperly destroyed evidence. In addition, the new application will streamline practices to reduce processing times from more than thirty to fewer than fifteen minutes per item. Since the Police Property Room processes five thousand items a month the return on the investment in staff time saved will be considerable.

IT0071 ELECTRONIC SUMMONS AND COURT SCHEDULING

Project Description

This project is designed as a joint effort between the Fairfax County General District Court (GDC) and the Fairfax County Police Department (FCPD) to develop automated solutions that will 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 provide judges and court personnel with a more predictable and manageable workload. Automated solutions will allow officers to issue traffic summons according to demands set forth by both traffic conditions and state and local traffic safety programs; allow court administrators to manage court dockets efficiently minimizing the time officers and citizens are required to wait in court;

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 improve access to statistical information about the monthly summons issuance patterns to identify officers with heavy caseloads.

Milestones

- Organization of GDC/FCPD project team, April 2006
- Complete business and requirements analysis, June 2006
- Acceptance testing, July 2006
- Move to production and begin pilot, August 2006
- Complete full deployment, October 2006

Project Budget

FY 2007 funding of $552,500 will continue the multi-phase process of developing a technology solution that meets the needs identified above. These phases include creating a Court Schedule Forecasting application that will use cyclical information about the volume of summons to pre-allocate available court dates to ticket writers in order to avoid unmanageable dockets and officer overtime and the implementation of an Electronic Ticket Writing/Data Entry application to automate the transfer of summons information from the scene to Central Records and GDC.

Return on Investment (ROI)

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 defendants, allow faster ticketing processes that get officers back on the road more quickly, reduce overtime for officers waiting in court, reduce the frustration and time citizens have to wait in court for a hearing, provide more efficient use of Commonwealth's Attorneys and Deputy Sheriffs, as well as provide the public near real time electronic access to case information.

IT0078 COURTHOUSE EXPANSION TECHNOLOGY

Project Description

This project will assist with the planning and implementation of modern courtroom technologies for fifteen new courtrooms being constructed as part of the on-going Courthouse expansion efforts. These technologies include integrated and mobile evidence presentation, real-time court reporting, wireless access, electronic wayfinding, video conferencing, video arraignment and judges' control of the technologies from the bench. The courtroom technologies proposed will advance the recommendations provided from the working prototype project developed from the original Courthouse design master plan and supported by the Counties affiliation with the Courtroom 21 Project associated with the College of William and Mary Law School.

Project Goals

This project will succeed the recently completed prototype project and implement modern courtroom technologies into 15 new courtrooms currently under construction as part of on-going courthouse expansion efforts. The technologies will be implemented over a two-year planning process and will include integrated and mobile evidence presentation, real-time court reporting, wireless access, electronic wayfinding, video conferencing, video arraignment and judges' control of the technologies from the bench.

Progress to Date

Prototype courtroom project to be completed in March 2006. Construction efforts are on-going to build out 15 new courtrooms. Completion anticipated January 2007.

Milestones

- *Organization of Courtroom Technology Team, September 2006*
- *Development of project plan with Courtroom 21, October 2006*
- *Completion of construction efforts, January 2007*
- *Procurement of recommended technologies, November - December 2006*
- *Installation and testing of equipment, January - June 2006*

Project Budget

FY 2007 funding of $1,730,000 will support the first phase of implementing the recommended technologies in the new wing of the expanded Courthouse. Funding will support the necessary consulting services and procure the necessary hardware and software needed to outfit a modern day courtroom. Consistency and standardization between the three Courts is necessary to maintain efficient courtroom operations and optimize available resources.

Return on Investment (ROI)

The primary benefit will be improved efficiencies and the facilitation of court processes and services that will provide a direct impact to citizens, businesses and employees. The main objectives are 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; and allow the Courts to keep up with the increasing demand and docket backlogs that currently exist.

3.4 CORPORATE ENTERPRISE

IT0004.1 FAIRFAX COUNTY MASTER ADDRESS SYSTEM

Project Description

This project provides the County with a Master Address System that will be a foundation for many county applications that use address information. One centralized database has now been developed and is in daily use. This will enable additional user agencies to obtain address data through a unique identifier, which will reduce the need to store address data in user agency databases. Instead, agencies can link to the master address database to ensure conformity to the County address nomenclature standard. The initial phase accomplished the design and construction of the master database; then the existing address data was compiled, reviewed, and scrubbed. The clean data was entered into the database, and the system was given a basic data maintenance interface, which is now in use. Phase two develops new interfaces to several key enterprise systems, including FIDO (inspections), IAS (real estate), LDS (land development processes), and GIS. In later years, other systems will be linked to the database, but those costs are not included in this project. This project builds previous analysis of the county's address information needs, and will expand to achieve an enterprise solution.

Project Goals

The primary objective is to provide a single repository or master list of verified site addresses that will include over 350,000 addresses. Most agencies within the County of Fairfax maintain separate address databases that are customized to their specific business needs. This project will develop and centralize a standardized address database containing all site addresses for Fairfax County. The Master Address System will provide accurate, reliable, and more widely available address data to many agency users. It will also ensure better, more timely service delivery. By eliminating inconsistent data and controlling the maintenance of the data in one centralized place, data integrity of geographic and address data can more effectively and efficiently assured. This system will retain valid and complete site addresses, and will maintain versioning of data. This will enable the County to retain historical address data to a level not currently attained.

Progress to Date

In FY 2000, a study of address usage at key county agencies was completed. The study identified a number of issues to be resolved and proposed a preliminary database structure for the master address database. In early FY 2002, a Statement of Work was prepared, and contractors brought on board, to commence the first stage of this project. This stage involved preparing the requirements report that documented the address flow in the county and included recommendations to make the address assignment and tracking process more efficient. In FY 2003 the base database design was revised and enhanced in house by County staff. Work on design and development continued in FY 2004 and FY 2005, and resulted in delivery of the core functionality. Contractor support was used FY 2004 to assist in the data scrubbing, and in FY 2005, contractor support was used for the development of the address maintenance application. In FY2006, several system enhancements are planned to allow more efficient processing and maintenance of addresses, improved search capabilities, and interfaces to additional key systems. One of the new integration points includes a web-services based GIS module that enables the maintenance application users to see the location of the address of interest.

Milestones

- *Complete Construction of Address Database, April 2004*
- *Complete Address Scrubbing to Parcels, January 2005*
- *Complete Address Maintenance Application, February 2005*
- *Complete Interfaces to Key Systems, June 2006*
- *Master Address Repository in production, March 2005*
- *Complete planned system enhancements and interface requirements, June 2006.*

Project Budget

FY 2005 supplemental funding of $262,400 was provided to complete the creation of a centralized, standardized address repository that contains all Fairfax County situs addresses. FY 2006 funding of $120,000 provides for necessary interfaces between the Master Address Repository (MAR) and existing agency databases.

Return on Investment (ROI)

Major quantifiable benefits of the MAR initiative are the elimination of redundant data within the County, increased accuracy and integrity of all address data, and efficiency in redesigning the process of assigning physical addresses. Maintenance and accountability of address data will be centrally focused in one agency. This project will increase availability of accurate, timely, online data to user organizations. The MAR will enable staff to better analyze demographics and statistics within the County. Processes will be put in place to automate previous manual entry into numerous databases. Enhanced tracking of address assignment and approvals will reduce staff hours for maintaining redundant data; this system will also create more sharable information between agencies. Savings in mailings would be realized due to the amount of mail that is returned due to incorrect addresses. Reconciliation time and stand-alone address databases will be reduced or eliminated.

IT0004.2 GIS ORTHOIMAGERY UPDATE

Project Description

This project is for the County's planned multi-year implementation of a Geographic Information System (GIS), as well as related projects that involve GIS data. GIS provides County staff and citizens the means to electronically access, analyze and display land-related data. Aerial photography taken in 1997 served as the basis for preparing planimetric data (observable features such as building footprints, edges of roads, sidewalks) and orthoimagery (spatially corrected vertical aerial imagery). Annual updates of this data are needed to reflect the changes that occur over time. The current program provides for the update of 25 percent of the County's database each year, and allows the County to keep up with the developmental changes. This approach enables the County to assure users that none of the imagery will be more than four years old. The funding will also continue to support viewing County land in a three-dimensional capacity at County staff desktops in agencies such as the Fire and Rescue Department, Department of Tax Administration, Police Department and Department of Planning and Zoning.

Project Goal

To continue implementing a four-year update cycle for the orthoimagery covering all 395 square miles with a buffer of 1000 square feet around Fairfax County.

Progress to Date

Four-year update cycle is up-to-date through FY 2006.

Milestones

- *County planned flown for color photography mission, March 2005*
- *In 2006, Fairfax will use its funds to support the upgrade of the Fairfax portion of the statewide orthoimagery to half foot pixel resolution. This will provide county-wide half-foot pixel resolution imagery for 2006.*
- *Start next cycle for 25%, Spring 2007*

Project Budget

FY 2007 funding of $265,000 starts the next four year cycle regular process of updating the aerial imagery and digital orthophotography for the County. (In FY 2006 funds were used to upgrade the statewide orthoimagery to half-foot pixel resolution). Contractors do the majority of the work for the County. Preparation of the aerial flight plan materials, data standards and specifications, orthoimagery quality control and assurance, and project management, are expected to take up to six months of County staff time.

Return on Investment (ROI)

The Orthoimagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Orthoimagery has proven extremely valuable in a wide range of county operations. Several agencies have significantly reduced travel requirements while others are expected to use it as they become aware of the potential gains. The use of orthoimagery has allowed

the County to more efficiently evaluate the reasonableness of property valuations changes in property appeals cases. Orthoimagery has become a highly visible, successful tool in serving the communities and citizens regarding their homes assessment valuations, move and relocations. (The orthoimagery is also used in floodplain analysis, particularly in the Bellview area). Orthoimagery is also available in several public web applications, enabling users to view aerial imagery of any area of the County. Public users can view parcel outlines, hydrography, major and minor roads, or just view imagery alone. These applications serve over a million maps per year.

IT0004.3 GIS OBLIQUE AERIAL IMAGERY

Project Description

This project provides a form of oblique imagery for the entire county that enables viewers to see the sides of buildings and structures and measure their height. This imagery enables agencies such as the Departments of Public Works, Tax Administration, and Public Safety Agencies to reduce field time in assessing and planning. In addition it will enable agencies to conduct analyses of buildings not possible in the past. This imagery augments orthoimagery, which is taken directly overhead (vertical) and does not capture the sides of structures. Both sets of imagery are part of the spatial data in the GIS data warehouse, providing County staff a wide range of information about the County to assist them in their business processes.

Project Goal

The project goal is to obtain obtain the oblique imagery and serve it to all County users who require it. Ideally the distribution would involve minimal desktop hardware configurations as well as desktop maintenance and support time. As users access the oblique imagery, they will be better able to evaluate business needs and processes in view of the new data. The technology goals have been met.

Progress to Date

The system is on line and being used daily. The software has been mounted on the Citrix server farm, and the data has been loaded on the County's Storage Area Network, making it available to any County user whose desktop is connected to the Local Area Network. Additional file storage was acquired to handle the imagery.

Milestones

- *County flown and photographed, March 2005*
- *Imagery made available to County Agencies August 2005.*
- *Next new imagery acquisition will be in 2007.*

Project Budget

FY 2007 funding of $146,000 will inaugurate the third round of a four round cycle of new imagery acquisition. The provider of this product provides a two-year program to purchase the imagery. No other external costs are anticipated. The total imagery cost of $269,360 will be divided into two payments of $134,680 each. The vendor prices include not only the imagery but the proprietary software for viewing the data. The software license is unlimited on county workstations, thus there will be no additional licensing costs. The County will also be able to share the imagery with the town of Herndon and Vienna since they are within the boundaries of Fairfax County, however, others will have to arrange their own purchases. Additional cost may be required for extra SAN storage for the acquired imagery.

Return on Investment (ROI)

The oblique imagery complements the ortho (vertical) imagery project by adding the ability to view buildings from the sides. Users are also able to take relative vertical measurements from these photos. This capability has proven particularly valuable to Public Safety staff in determining building and opening measurements. Similarly inspectors and assessors can obtain an up-to-date view of the sides and composition of buildings without having to go to the field.

IT0006 TAX / REVENUE ADMINISTRATION

Project Description

This project provides for 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) 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.

Project Goals

Project goals continue to focus on tax and revenue modernization by implementing the remaining web-based modules of the real estate system originally purchased in FY 2002. In FY 2006, additional product modules will enhance the efficiency of property assessing and inspection by field staff; will enable a coordinated approach to managing public inquiries and correspondence; will streamline common real estate transactions through customized forms; and will provide the core technical architecture to enable the other interactive modules to operate. The plan also provides for migration of the off-site Web component to the County's Web infrastructure, which will be more securely integrated with the real estate system.

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.

Milestones

- *Implementation of IAS modules with the exception of the Delinquent Collections Tracking product - February 2004*
- *First installment billing for tax year 2004 using IAS, June 2004*
- *Implementation of the iCare internet real estate property information lookup tool (Internet plug in for IAS) Integration of IAS with the department's cashiering COTS software Revenue Collector, June 2004*
- *Replacing existing real estate mainframe system interfaces, February 2004*

Project Budget

FY 2006 funding of $566,930 is provided to implement the remaining modules of the real estate system purchased in FY 2002. In addition, FY 2006 funding of $300,000 is included should the county exercise their option to migrate the existing real estate public access web application from an off-site location to a County owned and maintained location. No additional funding is required.

Return on Investment (ROI)

The remaining IAS modules will permit improved customer service without the addition of staff. Headcount 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, staff can ensure sufficient security of County data communicated over the internet and monitor the application on a 24/7 basis for optimal availability and ensure secure access.

IT0008 LIBRARY PROJECT

Project Description

This project was designed to more fully support circulation functions, public access to the catalog, and public access to online information services through the Internet, financial accounting, and management information. Network architecture upgrades, equipment upgrades, and enhancements were also part of the program. This project has allowed the Library to expand capacity to manage growth in demand for library services, provide access to Library resources and customer accounts, as well as other library catalogs, electronic documents, and remote databases without constraints of time or location; and provide decision support information for library management to facilitate the growth of the digital library by linking bibliographic records to stored digitized documents.

This project will allow for the installation of 48 self-checkout stations in 20 Libraries. Checking out books is the most labor-intensive aspect of face-to-face customer service for the Library. Self-check out will enable the libraries to maintain good service to customers in the face of increasing demand without adding staff. Existing circulation desk stations will be replaced with "combination stations" having two monitors; one facing the customer, and one facing staff. If the customer has a problem or finds that they can not complete a transaction because of fines owed, etc., staff behind the circulation desk can easily enter the transaction by switching it to the staff monitor and work with the customer to complete the transaction. In FY 2006, three circulation stations at each of the eight Regional Library circulation desks and two circulation stations at each of the twelve Community Libraries will be converted to self-checkout.

In addition, the project will provide wireless access to the Internet in the Public Access areas of the Library's Public network at all branch locations. This will enable the Library to expand its ability to serve customers requesting Internet access without expending funds for computers and their maintenance as well as finding space to accommodate more computers, as customers will have to have their own computing device to connect to the Internet.

Project Goals

To adequately serve FCPL users, the new system must be capable of supporting circulation; public and staff access to the Library's catalog and other online databases including digital repositories; acquisitions; bibliographic control; inventory control; serials management; interlibrary loan and document delivery; and management information reporting. As a part of securing the system, in FY 2004 Fairfax County's Department of Information Technology upgraded and reconfigured the county network to establish separate system network connections for Library staff use, and the public access PCs in branch libraries that provide general Internet access for patrons.

Progress to Date

The self-checkout project and the wireless project are currently underway. Both projects are scheduled for completion during FY 2006.

Milestones

Self checkout machines:

- *RFP for self checkout machines issued, November, 2005*
- *Vendor selection, February 2006*
- *Installations to be completed, June, 2006*

Wireless access:

- Equipment/ software specified to support wireless public access in libraries, November, 2005
- Equipment/ software ordered, December 2005
- Chantilly Library site survey for access points completed; cabling completed, January, 2006
- Equipment and software received, January, 2006
- Reston Regional Library site survey for access points completed, February, 2006

Project Budget

FY 2006 funding of $402,336 is provided for the installation of 48 self-checkout stations in 20 Libraries. Checking out books is the most labor-intensive aspect of face-to-face customer service for the Library. In addition, funding of $100,000 will provide wireless access to the Internet on the Library's Public network for customers in all branches.

Return on Investment (ROI)

Though circulation is increasing, the Library will not need to add circulation desk staff to handle the additional workload. With the opening of the new Oakton and Burke Centre libraries, 9/9.0 SYE positions will be transferred from existing branches to handle circulation functions. By having the customer complete the scanning of barcodes, moving and lifting books, staff will be mainly engaged with aspects of the transactions such as solving customer problems, handling money, and performing less routine checkout procedures. Customer satisfaction rates are expected to increase because lines will move more quickly as customers can manage their own checkout. Wireless Internet access at Libraries will help the County meet the demand for increased Internet access by Library patrons, at a much lower cost. It will draw more people into the County Libraries that might not be usual customers, and introduce them to the range of available Library services.

IT0011.11 ELECTRONIC ACCOUNTS PAYABLE SYSTEM

Project Description

This project is to provide 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 must provide 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 it currently takes to process accounts payable transactions. The creation of 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 goal was initiated 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 are to 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 by this project, we hope to increase countywide internal controls and management reporting by utilizing automated reporting techniques to provide better analysis of the County's accounts payable processes.

Progress to Date

After completing a project feasibility study, the County produced a gap analysis report that documented the following: 1) the current accounts payable processes and system environment, 2) the reengineered accounts payable workflow envisioned by the County, and 3) the gaps between the current (as-is) environment and the envisioned (to-be) solution. Based on this gap analysis report, a Business Process Redesign (BPR) document was developed as a master plan to identify the methods by which the county would achieve its envisioned solution; the BPR document included an analysis of the County's vendor transaction data to determine the optimal methods by which to receive and process invoice data.

The County is currently concluding the requirements phase of the project, which included meeting with subject matter experts and pilot agencies to identify a detailed set of functional requirements. Once the requirements documentation has been vetted, the project team will begin investigating technology solutions that can support the County's requirements.

Milestones

- *Complete the Functional Requirements document, February 2006*
- *Product evaluation and acquisition, May 2006*
- *Product detail design and setup, July 2006*
- *Develop technical requirements document, September 2006*
- *Custom programming and testing, December 2006*
- *Pilot implementation, January 2007*

Project Budget

FY 2007 funding of $530,000 will continue prior year efforts to implement a decentralized electronic accounts payable process from within the Department of Finance to county agencies. FY 2005 funding of $245,762 and FY 2006 funding of $249,210 was provided in prior years to support Phase I. By using imaging software, e-signature capabilities, and workflow technology, the electronic accounts payable solution will improve the operating efficiencies of this financial process.

Return on Investment (ROI)

This initiative requires the integration of the county's financial and procurement systems and will result in a paperless work process and enhanced management reporting. The greatest financial returns from implementing the electronic accounts payable process will be from reduced staff processing, document filing retrieval time, copier charges and storage costs. According to industry standards, the cost required to scan and index items is less than half of that required to manually file and retrieve folders of information. Based on the county's cost-benefit analysis, the reduction in staff processing time and copier costs would result in an annual savings of more than $2 million.

In addition, more than 800 boxes of records are archived annually, which currently require 1,600 square feet of storage space. Based on the monthly standard rate of $22 per square foot for storage, the reduction in storage cost will save more than $400,000 annually. Furthermore, faster invoice processing will maximize opportunities to realize vendor discount terms.

IT0011.13 AUTOMATED BOARD MEETING RECORDS

Project Description

This project initiative will begin the planning, designing and implementing of a document imaging program in the Clerk to the Board's Office. This project 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. In addition, this project seeks to digitally scan the last five years of meeting records and make them available online as well.

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

Currently in Business Process Reengineering stage to identify current processes.

Project Budget

FY 2006 funding of $200,000 is provided to begin planning, designing and implementing a document imaging program in the Clerk to the Board's Office.

Return on Investment (ROI)

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 Narrative

The existing structure, purpose and mission of the project provide a readily available infrastructure for County agencies to use to capture communications, track contacts, events, and complaints. This project expands the use of a proven Commercial-Off-The-Shelf (COTS) product called IQ by Lockheed Martin (formerly ACS, Inc.). The product has been successfully implemented in several County Agencies since its initial launch in 1999. IQ is a Citizen Relationship Management (CRM) system that provides an integrated approach to delivering service to citizens, colleagues, and staff. It gives users the ability to link to other areas within the database and to extend outside the IQ system through scheduling, scanned images, email, fax, and incoming/outgoing postal mail. In addition, IQ offers a variety of data points for easy and complete reporting.

Project Goals

In 1999, the county first starting using the Citizen Relationship Management (CRM) product, Intranet Quorum (IQ), at the offices of the Board of Supervisors, the County Executive, and the Clerk to the Board. Expansion of the product to other agencies (or portions of agencies) has continued every year. There are now an additional 10 agencies utilizing the software application – some with the same business processes and some employing it for their agency-unique tasks. Many of these business process implementations have mandated a multi-year or phased approach.

Over the course of the years, the county has integrated its Geographic Information System (GIS) and address data with the product to increase agency productivity. Both applications have recently upgraded to meet the evolving county technology standards.

FY2006 has been titled "The year of the great migration." To stay current with the county's technological standards, IQ has undergone a total re-write, reflecting the county's preferences in web application language, Oracle database versions, Enterprise platform standards, and desktop software suite. Demonstrating both fiscal responsibility and agency business awareness, only a portion of the existing user base has been migrated to the new version – IQ3. This is allowing staff to perfect their migration strategies and application knowledge, thus minimizing the impact on the agency's productivity.

FY2006 was spent with the migration of the over half of the user base. The FY2007 projects include the completing the migration of the agencies currently using IQ to the new version. This encompasses completion of the IQ migration by addressing the County Executive's Legislative Monitor, a custom standalone application; and Consumer Protection's customized taxi, licensing, and time modules. These development initiatives must be accomplished in order for these agencies to migrate to the new version.

Progress to Date

Previous implementations have established the infrastructure and several agency-specific implementations, so that more agencies can quickly take advantage of this technology. Building on lessons learned from previous implementations, a business process analysis involving agency staff and the vendor is underway for additional uses in agencies. The results will be used to effectively automate various business workflow processes and provide templates for future needs.

As IQ has been used in various agencies for several years, business processes have altered during these years. This multi-phased project is taking advantage of the migration in order to review processes and incorporate the results in the migration.

Milestones

- *Board of Supervisors and County Executive - correspondence, Implementation 1999*
- *Department of Consumer Protection, Implementation, 2000*
- *Office of the Clerk to the Board, Implementation, 2000*
- *County Executive, Legislative Monitor, 2001*
- *Office of Public Affairs, Implementation, 2002*
- *Human Rights Commission, Implementation, 2002*
- *DPWES – Office of the Director, Implementation 2003*
- *Alternative Dispute Resolution division, Implementation, 2003*
- *Department of Transportation, Phase One Implementation , 2004*
- *Police - Review business process, April 2004*
- *GIS, Geographic infrastructure and interface development/implementation for selected IQ accounts, April 2004*

- *Multi-agency, Roles implementation and workflow enhancements, January 2005*
- *DPWES – Urban Forest Management – Implementation, 2005*
- *DPWES – Solid Waste – Business process analysis and complaint tracking, 2005/2006*
- *Police – Chief's Office – Correspondence tracking - Business process review, workflow development and implementation, 2006*
- *Purchasing and Supply Management – Correspondence tracking – Business processes analysis and workflow development, 2006*

Project Budget

Funding in the amount of $200,000 was provided in FY2006. FY2007 funding of $276,539 is recommended to expand the use of the system to county agencies and to complete migration to the new software version. This includes the application development necessary to bring the Consumer Protection's customized modules and the standalone legislative monitor system into alignment through the latest version. As always, project implementation will continue as a joint effort performed by a team representing the user community, DIT technical staff, and the vendor. Vendor consulting services for implementation are included in the project budget.

Return on Investment (ROI)

Successful implementation of this service-enhancement project will provide enhanced communications between county staff, departments and agencies, allow agencies to share and monitor the status of projects, responses, and track 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. By implementing a proven product, agencies will forego the expense and effort of researching and evaluating similar CRM solutions. In addition, this solution does not preclude installations of applications that support the County's IT architecture, or interact with other agencies' CRM applications.

IT0024.1 PUBLIC ACCESS TECHNOLOGY - KIOSK

Project Description

This project provides funding for 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 via their convenience and versatility, public access technologies are capable of limiting staff involvement in providing basic information, thereby allowing staff to perform more complex tasks and respond to requests for more detailed or specialized information.

The multimedia kiosk is 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. A kiosk is a computer that is placed in a structure to dispense information and services. The kiosk application known as the Community Resident Information Services (CRiS) provides access to regional information in convenient locations and also allows citizens to conduct business. Two kiosks were initially deployed in August 1996. Currently, there are 31 kiosks operational in the County with more to be deployed in FY 2007. These kiosks have accounted for over 9.6 million citizen inquiries to date.

Project Goals

In FY 2007, Kiosk enhancements will expand the range of information and applications available through the web and Interactive Voice Response (IVR) channels. Other objectives include deployment of additional kiosks to expand public access, and piloting the integration of card reader functionality that could enable the kiosks to accept credit card payments.

Progress to Date

- Progressed from a pilot project to a complex, operational program.
- Evolved from a County to a regional kiosk program.
- Continued growth in the area of additional business transactions.
- Incorporated interfaces to state-level business transactions.

- Migrated to a much more user-friendly structure.
- Continued with significant content growth.
- Enhanced technical capabilities of kiosk program in the areas of printing, mapping, location information, user instructions and operations.
- Implemented Metropolitan Washington Council of Government (COG) Commuter Connections on CRiS.
- Added two new partners; INOVA and Economic Development Authority
- Redesigned the application to achieve a new look and feel.
- Developed a video in-house for promoting CRiS.
- Integrated the current application with the Web by introducing a Netkey browser.
- Introduced advanced sound control.
- Completed a feasibility study with DMV to integrate DMV's extraTeller on CRiS.
- Redesigned information architecture for Fairfax County and all our partners.
- Completed replacement of kiosk hardware that included CPUs, printers, monitors, etc., at each kiosk location in FY 2003.
- Completed replacement of enclosures with new enclosures that offer components like keyboard, scanner, and credit card reader etc. in FY 2003.
- Completed Partnership with Town of Vienna and Town of Herndon.
- Networked INOVA kiosk
- Expanded Regional content.
- Continue redesign of hardware/software architecture in order to address security issues in FY 06.
- Continue enhancement of the GIS and Location information portions of CRiS application in FY 06.
- Complete deployment of sound domes in FY 06.

Milestones

- Deployment of additional kiosks in FY 2007.
- Continue upgrading of development software.
- Continue redesign of information architectures for all partners.
- Add new Partners.
- Pilot integration of credit card reader with CRiS application using a web application.

Project Budget

A portion of the FY 2007 budget of $675,000 will be used for consulting services, software and hardware acquisitions and training. The project requires on-going support from Public Access staff and Telecommunications staff to help plan and re-configure new systems, and to help trouble-shoot telecommunications system problems.

Return on Investment (ROI)

This project will continue to provide a single information architecture and supporting infrastructure for all platforms and continue to provide new information and e-services to the public. It will further expand the capabilities of the newly implemented content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents. The County will be able to build applications quicker and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources needed to provide basic information, thereby allowing staff to be deployed to more complex tasks; as well as to respond to requests requiring more detailed or specialized information.

IT0024.2 PUBLIC ACCESS TECHNOLOGY - INTERACTIVE VOICE RESPONSE

Project Description

This project provides funding for 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 via their convenience and versatility, public access technologies are capable of limiting staff involvement in providing basic information, thereby allowing staff to perform more complex tasks and respond to requests for more detailed or specialized information.

Interactive Voice Response (IVR) technology program develops custom interactive telephone applications that can access and update data in a variety of County databases, in addition to providing static information in a timely, convenient manner. The IT project has been deployed to allow citizen's access to Fairfax County services and information via touch-tone telephone service. 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." It is one of the foundations for enhancing public access to government information and business transactions.

Project Goals

The primary goal is to continue to apply text-to-speech technology for certain applications determined to be resourceful aligned with e-government goals. Interactive Voice Response enhancements include the continued integration of Web and IVR via XML technology, creating a Health Department Emergency Responders Verification line and developing a Traffic Court Information System for public use.

Progress to Date

The DIT IVR currently answers more than 4,000 calls per weekday and between 400 and 500 calls each weekend. The system is available approximately 24 hours a day to interact with citizens, giving citizens another 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 even if citizens call after hours or on weekends.

Current Applications:

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 Inspection 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

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 numbers, directions),

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),

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

DIT: Technical Support Center, help desk for all computer related problems.

Milestones

- Upgrade existing servers to Window 2003 server
- Migration old code to new Script Express code
- Create an application to automate Usage reports.
- Add Spanish versions to various applications
- Add text-to-speech functionality to various applications

Project Budget

A portion of the FY 2007 budget of 675,000 will be used for consulting services, software and hardware acquisitions, and training. The project requires on-going support from Public Access staff and Telecommunications staff to help plan and re-configure new systems, and to help trouble-shoot telecommunications system problems.

Return on Investment (ROI)

This project will continue to provide a single information architecture and supporting infrastructure for all platforms to deliver new information and e-services to the public. It will further expand the capabilities of the newly implemented content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents. The County will be able to build applications quicker and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources needed to provide basic information, thereby allowing staff to be deployed to more complex tasks; as well as to respond to requests requiring more detailed or specialized information.

IT0024.3 PUBLIC ACCESS TECHNOLOGY - INTERNET/INTRANET INITIATIVES

Project Description

This project provides funding for 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 via their convenience and versatility, public access technologies are capable of reducing staff involvement in providing basic information, 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 to make information more readily available to County citizens (as well as people and businesses outside the County). Internet initiatives include research and development of emerging technologies, maintenance of the current Web infrastructure, and provision of consulting services and support to the staff of other agencies requiring a Web presence. In addition, we will be looking at new technologies that would provide added value for Fairfax County.

Project Goals

The vision described in the Project Description will be achieved by providing new information and services on all platforms, continuing to build upon our 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 platforms 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 applications and data can be used and delivered across multiple platforms, while continuing to provide support for other agencies in the development of Web content and applications.

Progress to Date

The success of the County's Public Web site has been extraordinary. The County site is receiving approximately 40,271 visitors per day, which equates to an average of 238,414 page views per day and an average of 1,200,000 hits per day. Approximately 55 County agencies have a presence on the site. The functionality of the site has expanded significantly during the past 12 months with the addition of significant content and information. New and updated business transactions have been added during this period as well.

1 - Public Web Site Search and Navigation

Web Content Management is considered to be Phase II of the Public Web Site Redesign. During the first phase, over 120 content contributors were involved in migrating information from the old site to the redesigned site within a six-month period. We defined a basic Information Architecture for the site, which

was then validated by 14 citizen and business focus groups. We developed "look and feel" templates for the redesigned site and coordinated the migration of over 20,000 files to those new templates. Most importantly, we established working inter-agency groups for the development and dissemination of standards related to site design, application development and implementation. 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. We also enhanced the functionality of the site search. In FY03, we improved the main subject area pages (Living, Doing Business, Visiting and Government). Enhancements of the site included: News & Information section, Emergency Information, Local Weather and improved navigation. In FY04, we built a robust and secure environment that facilitates delivery of integrated and accurate information to citizens. In FY05, 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.

2 - Infrastructure Architecture and Management

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

- *Implemented a load balance sever farm for public web site*
- *Secured network settings on all 34 servers to minimize risk of intrusion*
- *Implemented a statistical reporting system for both Internet and intranet servers*
- *Refined the server monitoring system*
- *Determine and implement a supporting Infrastructure for .NET applications*
- *Develop .NET standards based on the implementation of .NET projects*

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 was started in FY 2005 with a pilot prototype in FY 2006. In FY2007, we will continue our efforts with Homeland Security in creating a data exchange hub for the metropolitan region.

4 - Infoweb Redesign

The look and feel of the main page of the Infoweb (Intranet site) was redesigned, and continues to be enhanced. Unlike the Public Web Site redesign, 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. Internet Services staff supported 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. It will also be 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

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. We have purchased and are implementing a COTS solution.

6 – e Services

Internet Services prototyped new application development platforms and developed standards and best practices for our current environment. DIT supported other agencies in the development of Web content and applications. New and updated business transactions supported by the Internet Services staff over the last year include:

- *HS/OFC Institute for Early Learning Training (IFEL)*
- *HS/OFC Child Care Management System - Modification in FY04*
- *ICARE DTA Real Estate Assessment and Information Query*

- *DHR Applicant Information Management System (AIMS)*
- *Public Meeting Calendar*
- *GIS Digital Map Viewer - Modified in FY04*
- *DTA ECheck - Modified in FY04*
- *Contact Us - Modified in FY04*
- *Library Historical Newspaper Index*
- *Library Booklists*
- *Library Picturebooks*
- *DTA TaxEvaders*
- *HS HIPPA*
- *DPZ eComplaints - Modified in FY04*
- *Infoweb - IBusiness Enterprises (iBE)*
- *Infoweb - DFS Independent Living Program (FILP)*
- *Infoweb - DAHS Facility / Site Profile*
- *Infoweb - DFS Account Receivable (FAMSAR)*
- *Infoweb - HS eAssist - Modified in FY04*
- *Infoweb - HS FCPMS / IAS - Modified in FY04*
- *County WEB – Kids and Teens portal, FY05*
- *County WEB – Crime Mapping, FY 05*
- *County WEB – Child Care training, FY 05*
- *County WEB – My Neighborhood, FY 05*
- *County WEB – Seniors and Disability portal- FY 05*
- *County WEB – Sheriff Service Civil Process, FY 06*
- *County WEB – Enterprise Search, FY 06*
- *County WEB – Public web site accessible via wireless, FY 06*

Milestones

- *Provide additional search capabilities on the public web site*
- Enhance the public web site to make it more compliant with Section 508 for accessibility
- Continue to provide support to county agencies for e-gov initiatives
- *Continue support and expansion of e-payment transaction.*

Project Budget

A portion of the FY 2007 budget of $475,000 will be used for consulting services, software and hardware acquisitions, and training. The project requires on-going support from Public Access staff and infrastructure staff to help plan and re-configure new systems.

Return on Investment (ROI)

This project will continue to provide single information architecture and supporting infrastructure for all platforms and continue to provide new information and e-services to the public. It will further expand the capabilities of the newly implemented content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents. The County will be able to build applications faster and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources needed to provide basic information, thereby allowing staff to be deployed to more complex tasks as well as to respond to requests requiring more detailed or specialized information.

IT0043 HUMAN RESOURCES INFORMATION SYSTEM

Project Description

The purpose of this project is to seize opportunities to modernize the County's current Personnel/Payroll System (PRISM), with a more technologically advanced database, workflow, workforce management information resource, and user-friendly screen presentation. Although the county has used this original COTS system for 15 years, its technology is about 20 years old and is technologically obsolete. Aside from the proprietary nature of the software with limited flexibility, a major risk exists due to the reality that the skills pool available to support its database is significantly diminished in the market. The project scope is revised from the original concept of replacing the system. Before launching into a replacement of the existing application, in FY 2002, a study of integrated human resources/payroll/financials offerings was conducted. It was determined that it was not feasible or cost-effective to replace the current portfolio of systems at this time. However, the use of new application integration and Web tools became a viable option for improvement. Such tools were procured as part of the Department of Information Technology's strategy to improve the utility and functionality of older systems by modernizing the current production applications at a fraction of the cost of full-scale replacement.

The County's overall goal is to facilitate agency management and enable self-service business processes. Automation and modernization are empowering 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.

By initiating this project, the Department of Human Resources and DIT began the first step towards a strategic goal of an integrated suite of enterprise applications. This is a multi-year project to migrate the current PRISM system to a more standard, industry accepted relational database platform.

Project Goals

The primary goal is the migration of the current system to a more standard, supportable database and development environment that incorporates workflow and Web technology. This project will also provide for improved ability for reporting and decision making in agencies by creating information marts and decision tools for better flexibility for workforce management by agencies. Further, the project scope includes improvements identified by Department of Human Resources as part of their strategic plan to improve process and access. This project supports several of the strategic DIT directions as outlined in the Information Technology Plan, namely, that the County provide citizens and County employees with timely convenient access to appropriate information and services through the use of technology. Secondly, that business needs drive information technology solutions and that we optimize systems by applying cost-effective solutions that deliver fast, measurable benefits. This project provides a "proof of concept" project for conceptual design, database and code migrations. It is anticipated that a vendor will supply tools and services necessary for the migration, conversion and re-engineering of PRISM system.

Progress to Date

A team of DIT and DHR staff has been formed to conduct a study of solutions and best practices for a HRMS. This study will identify the database solution that PRISM should be migrated to, the language that the business and functional processes will be coded in, and the appropriate presentation layer for displaying and modifying the system. The life-cycle costs of implementing the projects will be analyzed and identified. Best practice implementation-phasing recommendations, based on the industry experience and the County's business operations, will also be included as part of the report. After completion of the initial study it is anticipated that a portion of the existing PRISM system will be selected for a "proof of concept" project. Depending on cost, an RFP may be issued detailing the requirements based upon the processes selected and the targeted database and its complementary software and tools. The outcome of this "proof of concept" project will next be reviewed by the technical and functional policy steering committee, for final decisions regarding approaches, scope, and next steps. Other improvements include improved reporting capabilities for agencies, and improved look and feel for a variety of functions like time-sheet, and on-line pay advice.

Milestones

Phase I

- *Initial project definition and planning*
- *Identification of the specific database, platform and presentation software for the migration.*

- *Creating a Request for Proposal (RFP).*
- *Selecting the business processes that will be included in the "proof of concept" project.*
- *Select the database with all of its components and to identify business features and requirements that can be incorporated into the new version of PRISM.*

Phase II

- *Develop and release a RFP for the acquisition of a vendor supplied migration solution*
- *Vendor selection*
- *Identify business processes to be automated.*
- *Policy steering committee will consider any business or policy changes that will need to be made to facilitate the goal of a modern, efficient and effective solution that maximizes the productivity opportunities of the newly migrated PRISM application.*
- *Migration of the existing PRISM data files to the new database application with software, tools and infrastructure hardware.*

Project Budget

FY 2006 carryover funding will continue to support refinement of requirements and first stages of the business process improvements, acquisition of tools to improve current system usability, and consultant costs. It is anticipated that DIT staff will do much of the project work.

Return on Investment (ROI)

PRISM is the largest of the legacy applications that needs to be converted to a standard platform. Elimination of the annual fee to run this software (and dozens of associated utilities) on the corporate enterprise environment is significant. The cost of this is approximately $400,000 per year. The current IDMS/R environment requires programmers and analysts with very specialized analytical and programming language knowledge which is difficult to recruit these 1980s skill sets. IDMS/R also requires specialized DBA (database administrator) skills. There are very few contract vendors who offer IDMS-skilled programmers, analysts and DBAs. Newer database and software architectures based on more widely adopted standards and refined processes will provide numerous productivity benefits in the Department of Human Resources, DIT and agencies, and reduce the risk of relying on a unique system for support. The new technology re-design will provide the opportunity for DHR to implement a number of features and functionality to provide better utility of the system in performing transactions and using information and data, and more efficient processing.

IT0072 CRM - CALL CENTER INTEGRATION

Project Description

This project provides the foundation for a comprehensive call center technology solution which will be based on an open architecture, providing an opportunity for sharing process, resources and critical information across multiple Fairfax County call centers. This project will also address the service needs by remedying existing business problems while improving operation efficiency and upgrading the technology infrastructure for all county call centers. The milestones are the approval of additional funding, actual procurement and subsequent implementation of these tools.

Project Goals

The goal of this project is to determine a comprehensive CRM architecture which will use industry standard CRM, Call Center, and 311 technologies, and incorporate existing county automated tracking systems. The objective of county call centers to meet the needs and expectations of Fairfax County citizens while providing timely and appropriate assistance based on the citizens' needs will be better met with these additional tools. Another 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 will it create a central call center site. The concept provides a central technical architecture and infrastructure foundation supporting call center processes, integration of call center processes, and sharing of resources as appropriate in improving overall services. This project is complimented by the telephone modernization project, which will improve the telephony technology foundation needed to distribute and track calls.

Progress to Date

A project steering committee consisting of DIT and agency staff that use or have interest in call center functionality has been established to manage the implementation and integration of the CRM software within the infrastructure environment for Office of Public Affairs (OPA) call center pilot.

Milestones

- *RFP development for CRM software and integration, November 2005*
- *Contract Award, April 2006*
- *Integration/Evaluation, May 2006*
- *Training/Deployment, July 2006*
- *Pilot Implementation, August 2006*

Project Budget

FY 2006 funding in the amount of $500,000 was provided for the CRM pilot to replace the existing stand-alone tools used to provide information to incoming callers by the OPA.

Return on Investment (ROI)

Implementing standard technologies will produce noteworthy cost savings. Primarily, labor savings associated with these activities may be significant. Additional economies result from increased efficiencies created by process automation and from accountabilities associated with the use of performance management systems. The County will save money by having a more efficient work force. Calls can be handled more efficiently, with Call takers being able to optimize time spent with each caller, enabling them to spend more time on resolving problem cases. The caller's experience will be improved by having better interaction with a better equipped and informed call taker, and faster resolution of interaction. Return on Investment will be realized from the increased productivity due to automation or streamlining of telephone processes, improved productivity associated with performance management systems made possible through technology, and due to improved and reliable capture of data required for mandatory service reporting, which will maximize program funding opportunities, as well as enable best practice service delivery and improved operational efficiencies.

IT0074 DATA ANALYSIS REPORTING TOOL

Project Description

This project provides a modern capability for reporting on financial data from the County's legacy financial systems. The Data Analysis Reporting Tool (DART) will replace existing ad-hoc, stovepipe reporting with a unified reporting methodology and capability. Financial information from the County's financial, procurement, and payroll systems will be integrated in a data warehouse, and reporting features will provide the users the capability to generate on-demand charts, reports, inquiries, and analyses.

Project Goals

The goal of the project is to maximize the analytical functionality of existing financial and performance data. The solution will enable management to target discrepancies, inefficiencies, and extraordinary line items for cost-savings and improved control. In addition, the project will increase transparency into spending as a whole, while reducing the development time to achieve delivery of new reports and special research results.

Progress to Date

This is a new project in FY 2007.

Milestones

- *Requirements definition for agency reporting needs, FY2007*
- *Selection of business intelligence platform solution, FY2007*
- *Develop a prototype, FY 2007*

Project Budget

FY 2007 funding of $238,000 is provided for completing a full requirements analysis and feasibility study which will help in the selection of a Business Intelligence product and initial definition of a corresponding data warehouse. Current reporting capabilities within the County are limited to voluminous reports generated from the County's mainframe systems. These reports are difficult to download and format. Significant time is required to re-key and verify financial data, which impacts the timeliness and usefulness of information.

Return on Investment (ROI)

Cost savings will be realized through a reduction in staff hours, which are now spent re-keying and reconciling financial data. More timely and relevant data also will enhance decision making throughout the County.

3.5 TECHNOLOGY INFRASTRUCTURE

IT0031 WINDOWS 2003 SERVER

Project Description

The Microsoft Windows Server 2003 Family demonstrates high levels of dependability, performance, and connectivity, with unprecedented price/performance value. At the cornerstone is native-mode Microsoft .NET functionality through the .NET Framework and standards-based technologies, which will enable businesses to easily and seamlessly connect information, people, systems, and devices. Windows Server 2003 is the foundation enabling an unprecedented level of software integration through the use of XML-based Web services. Windows 2003 complies with HIPPA requirement for e-mail security and is an essential communication tool for service providers that handle individually identifiable health information.

Windows Server 2003 Enterprise is designed for mission-critical applications such as networking, messaging, customer service systems, databases, and e-commerce web sites. Dependability and productivity are improved by integrating multiple directories, databases, and files, single-processor solutions scale to 64-way systems, terminal services load balancing, and allocation of CPU and memory utilization on a per-application basis are features included in Windows Server 2003.

Project Goals

The purpose of this project is to implement Windows 2003 Server as the County's standard operating system for the enterprise LAN server infrastructure. Windows 2003 has functionality enhancements that will enable the county's allocation of processor resources and server consolidation efforts. LAN infrastructure to be more efficiently managed and supported by DIT and agency administrators, and has increased embedded security controls to protect the infrastructure environment. The most important impact on existing business processes and systems is to ensure that any existing LAN hardware or business application which is used to automate the agency's business processes is served by a standard, compliant LAN architecture that facilitates stability, security and reliability. This facilitates shared resources, automated break-fix roll-out reducing the need for manual intervention, and user administration, optimizing production 'up-time'. This is critical since failure of a hardware device or LAN application to perform in the LAN environment may prevent or hinder the ability of the agency to complete its mission and maximize productivity. In some cases, upgrades may be needed for certain hardware devices and software applications. These situations will have to be evaluated on an individual case basis. The planning activity for this project compliments DIT's goal for more efficient allocation of processor resources and server consolidation efforts.

Progress to Date

This project commenced in FY 2005. Preliminary planning and training for technical staff completed in FY 2005. It is estimated that this project will take about twelve to eighteen months to complete migration of all servers (approx 320 servers) in the environment. It is anticipated that the Windows 2003 Server migration project will be complete by October, 2006.

Milestones

- *Obtain contractor services to assist with the project planning and operating system software deployments, July, 2004*
- *Determined release of the Windows 2003 Server operating system to be deployed, July, 2004*
- *Survey County agencies to determine final server inventories and applicable servers that need upgrading; and determine appropriate schedule for the agency migration*
- *Procure the Windows 2003 Server software licenses, August 2004*

- *Finalize migration methodology and implementation plan, August 2004*
- *Develop and implement the communications strategy between the DIT project staff and the agency technical staff to disseminate the project information to the agencies, September 2004*
- *Finalize planning and deployment schedule, September 2004*
- *Complete agency migrations to Windows 2003 Server, October 2006*

Project Budget

FY 2005 funding of $607,400 will support the County wide migration of Windows 2003 Server, which will cover the hardware, software licenses, and consultant services necessary to migrate the County's LAN servers to Windows 2003 Server. No additional funding is required.

Return on Investment (ROI)

Windows 2003 will have a significant positive impact on overall cost and control of IT assets in improving total cost of ownership which includes operational efficiencies and end-user productivity. More efficient management of resources is provided which will support improved terminal services for extending the environment remotely, more deployment options, automated system recovery service, and automated fail-over for disaster recovery. This will allow IT staff to handle the on-going growth in use of automation and architectural components within existing resource levels and to maintain service levels. It is anticipated that response time for handling troubles and deployment of future IT assets will be improved.

IT0050 PUBLIC SERVICE COMMUNICATIONS REPLACEMENT

Project Description

This project provides continuing funding for replacement 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, with updated technology that meets the needs of user agencies. The completed system will provide adequate call processing capacity and area coverage to more than 90 percent of the area within the jurisdictional boundaries of Fairfax County. The old 20-year old Public Service Communications System was based on a design that uses two transmitter tower locations and twenty radio channels, with ten channels at each tower. The transmitter tower sites are located in Lorton, on the Energy/Resource Recovery Facility smokestack, and in Fairfax City, on the rooftop of the Massey building. The old system only provided geographical coverage for approximately 60 percent of the County and had limited call processing capacity, frequently resulting in unavailability for users. In addition, the old system requires users to manually select the correct radio channel based on their location within the County, requiring knowledge of the coverage each channel provides to the different parts of the County. There are large geographic areas where radio communications are not possible and many of these locations are heavily populated areas of the County. The old 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 severe geographical coverage problem for County agencies, and provides reliable communications for the County fleet, back-up and interoperability supporting emergency management activities, and communications for an increasingly mobile workforce. In addition, user-specific applications can be supported over the new network, allowing for improvements such as Automatic Vehicle Location (AVL) for school and FASTRAN buses, and dispatch/map data for public works vehicles. The new system is also intended to provide a fully independent backup radio system for the public safety agencies of the County.

Progress to Date

Prior year activities have consisted of the completion of a consultant study with recommendation for the replacement system, the development of requirement specifications, contract award, tower site acquisition and FCC licensing requirement activities, and the migration of schools and county fleets to the new system. The entire network and remaining migrations will be completed by December 2006.

Milestones

- *Final Consultant's Report received, November 2001*
- *System Design begin, December 2001*
- *Contract Award and Execution, December, 2002*
- *Licensing and Tower Site Acquisition begin, January 2002*
- *Licensing and Tower Site Acquisition complete, 2005*
- *Site Preparation, 2005*
- *Network Equipment Installation, 2005*
- *Reliability and Functional Testing, 2006*
- *System Acceptance, 2006*
- *Procurement and installation of more than 3,600 new mobile and portable radios, 2006*
- *Old system retired, September 2005*
- *Full implementation and completion, Dec 2006*

Project Budget

The FY 2007 project cost is estimated to be $1,688,517 and includes the third-year of a seven-year annual lease-purchase payments for the new radio network infrastructure, including the increase of radio repeater locations from two to seven sites, to ensure greater than 90 percent call coverage, and for operating costs during the year. 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. Based on a portion of project costs, derived from the number of radios users will have operating on the system as a percent of the total number of radios; $1,100,000 will be recovered from Non-General Fund Supported agencies, the Fairfax County Public Schools and Fairfax County Water Authority in FY 2007.

Return on Investment (ROI)

The return on investment for this system upgrade will result from the enhanced reliability and coverage that will be obtained. The replacement system provides reliable radio coverage to many areas of the County that are not covered by the current radio system. This will provide the necessary protection and safety for bus drivers and other staffs that depend on reliable communications, improve customer service to County citizens and other County agencies, and reduce reliance on commercial wireless networks in addition to future cost avoidance and other non-quantifiable benefits. The completed system will be fully compatible with the mobile and portable radios used by the County's public safety radio system. This will allow for direct communication between public safety and public service users for incident or disaster management, as well as provide a separate back-up system for the Public Safety system should that system fail. The County will realize a 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 continues funding to enhance and expand the capability of internal users to access the County's systems from remote locations, service field activities, and telework. To accomplish this, the telecommunications infrastructure must be flexible in its modes of access, while maintaining a stable and secure communication environment. Because of the varied hardware and software capabilities of prospective telecommuters and the architecture of agency specific applications, the remote access solution uses a variety of technologies including dial-up modems, Virtual Private Network (VPN) technology, and Citrix servers to meet the various access requirements of remote access and telecommuter users.

This project provides additional funding to enhance and expand the capability of Citrix using thin client technology. Because of the varied project using Citrix to access county information. The

telecommunications infrastructure must be flexible in its modes of access, while maintaining a stable and secure communication environment. The use of thin client technology will allow for the potential saving in the PC replacement requirements in the county. The County can purchase less expensive thin client terminals for core business requirement and reduce the support cost with the proper implementation.

Project Goals

An enterprise-wide standardized remote access control methodology will provide 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 product will increase security, simplify management, speed reporting and data analysis, and provide secure access from remote locations.

Progress to Date

This project commenced in FY 2004. Required software licenses have been obtained. Business units to participate in the first phase of the rollout have been identified. Implementation is planned to start in February 2005.

Milestones

- *Plan and procure the necessary Citrix environment using thin client technology, July 2004*
- *Purchase the required software licenses to ensure compliance with license agreements, July 2004*
- *Identify business units to participate in the first phase of the rollout, July 2004*
- *Install and test hardware and software, August 2004*
- *Full production services to all selected users, November 2004*

Project Budget

In FY 2007, additional funding of $100,000 will be provided to continue the build out of the telework environment and to increase the number of applications that can be accessed remotely. Additional Citrix licenses, Microsoft licenses and consultant services may be required in addition to Security Token Cards and application software licenses.

Return on Investment (ROI)

This project provides a cost effective approach to enhance the County's infrastructure to offer flexibility for a variety of types of end-user devices that may be used by County staff, and to encourage more employees to take advantage of telecommuting in line with regional goals supported by the Board of Supervisors. The use of thin client technology also will allow for potential savings in reducing the desktop configuration requirements in the County: the County can purchase less expensive thin client terminals for core business requirements and reduce overall support costs.

IT0060 TELECOMMUNICATIONS MODERNIZATION

Project Description

The Telecommunications Modernization project is a multi-year effort to replace the County's network of disparate voice technologies with an infrastructure platform based on current technology and full integration into the Institutional Network (I-NET) – the county's private fiber communications infrastructure. This new telephony network architecture will accommodate the projected growth in business applications requirements, and will allow cost savings through standardization of equipment, streamlining maintenance, consolidation of telephone line costs, integrating and leveraging all the County's communications platforms, and aligning with industry trends. Presently, the County relies on a telephone infrastructure based on outdated 1980's technology and equipment for its communications needs including 15 different models of Private Branch Exchanges (PBXs), analog and digital multi-line telephones, telephone company-provided technology, and single-line telephones.

Modernization of the County's telecommunications network is by necessity an ongoing and evolving process. As industry standards mature and inter-networking requirements change, the telephone communications network's capacity and

configuration must do so as well. This multi-year project will facilitate the utilization of proven, advanced technologies to streamline business processes, take advantage of economies of scale, enhance operational efficiency and reduce costs. The new infrastructure will also promote distributed telecommunications applications with centralized management. This strategy will help to ensure that the information technology infrastructure serves the needs of the agencies and advances improvements in service delivery to the citizens. In addition, this approach will give the County the tactical flexibility to adopt future value added technologies with minimal need for new hardware.

Project Goals

The strategic goals of this project is to move the County towards a strategic voice solution that will underwrite the use of Voice over Interne Protocol (VoIP) while maintaining complete TDM (current technology), functionality. An IP enabled enterprise-class platform will provide the County with the ability to adopt newer value added features of emerging IP telephony. Any new architecture must yield a flexible yet stable infrastructure that can meet immediate telephony needs and support future enhancements. This new platform will be the foundation for eventual movement to a converged network environment. Over the life-cycle of an evolutionary program, change would be introduced in smaller increments than would be possible in a massive change of technology, applications and processes. The following six strategic goals for Fairfax County voice services were developed and reviewed with senior County technology managers:

Goal 1: Optimize the total life cycle cost for voice services.
Goal 2: Provide common voice architecture, County-wide.
Goal 3: Provide secure remote access for voice and data to expand Telework
Goal 4: Provide compatibility with "best-in-class" citizen access technologies.
Goal 5: Develop a survivable architecture that is scalable and flexible.
Goal 6: Prepare for the convergence of voice and data onto one logical network.

These goals framed the creation of Fairfax County's Strategic Voice Technology Plan.

Progress to Date

Project commenced in FY 2005 with needs analysis and development of the detailed requirements document needed for solicitation. The RFP was released in September 2005 and responses were received in October 2005. It is anticipated that a contract award will be made for mid-February 2006.

Milestones

- *Network analysis and engineering begin, July 2004.*
- *RFP release, September 2005*
- *Contract award, May 2006*
- *Installation of pilot project, June 2006*
- *Installation of Phase 1, July 2006*
- *Integration and Training for Pilot Project, July 2006*
- *Integration and Training for Phase 1, December 2006*
- *Installation of Phase 2, February 2007*
- *Integration and Training for Phase 2, September 2007*
- *Installation of Phase 3, December 2007*
- *Integration and Training for Phase 3, September 2008*
- *Installation of Phase 4, January 2009*
- *Integration and Training for Phase 4, July 2009*
- *Installation of Phase 5, November 2009*
- *Network Engineering Ends, January 2010*
- *Integration and Training of Phase 5, June 2010*

Project Budget

FY 2005 funding in the amount of $600,000 will be used for telephony network engineering and contractor costs. FY 2006 funding in the amount of $3,300,000 will be used for telephony network equipment, engineering and installation costs. The prime PBX manufacturer and any necessary subcontractors will be identified through a competitively bid procurement during FY 2006. Additional funding of $4,495,000 is provided in FY 2007 to continue the technology upgrade and implementation. Additional funding is anticipated for subsequent fiscal cycles.

Return on Investment (ROI)

The benefits derived from the implementation of this project are quantifiable and substantial. Direct cost savings include: a 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 lines 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.

IT0061 IT SECURITY

Project Description

This project supports the County security architecture, designed to provide an appropriate level of protection for all County information processing resources regardless of technology platform. Aimed at ensuring that county systems and information and the confidentiality of legally mandated information are not compromised, new technologies need to be employed to meet current and future security challenges. The Fairfax County Information Technology Security Policy, the mandated specifications of the Commonwealth of Virginia Information Technology Security Policy and Standards, and the Health Insurance Portability and Accountability Act (HIPAA) Security Rule, along with other mandated privacy laws and County internal audit priorities, are examples of governing legal precedence and policy that dictate a requirement for audit controls to record and examine activity in information systems. Such audit controls will protect the integrity and sensitivity control on the information contained within the County's technology infrastructure. This project will provide security analysts and managers with advanced tools to proactively build and measure comprehensive security best practices within agencies and across the County. Additionally this project will afford Fairfax County to manage connectivity to its infrastructure through controlled network connections that will interrogate unknown devices for verification of anti-virus, patch management and licensing standards. Devices found not to be in compliance will quarantined/or refused access until they can be placed in compliance.

Project Goals

Through this project IT will continue implementation of a modular network infrastructure that will allow for incorporation of necessary levels of security to be embedded in specific functional areas. In order to implement this modular infrastructure, additional firewalls, intrusion detection and other networking devices are required and will be implemented in appropriate areas of the system. Additionally, the on-site support of highly skilled network engineers must be deployed in order to roll out a simplified security design and create a manageable security architecture that allows for security devices to function optimally and provide identification of specific threats. A standardized and centralized secure authentication and authorization methodology for web based applications will be implemented.

An enterprise-wide standardized access control methodology will provide a solution for employees and internal 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. The provisioning feature within the solution automates the administration function to provide real time transactional account access for e-business. This tool provides an automated means for centrally managing access to enterprise resources across platforms and provides a secure access to enterprise applications, networks, databases and other essential resources through a single sign-on capability. User authentication and authorization management is policy based and centrally managed. This allows for comprehensive a countywide security monitoring and audit control process including audit and reporting services. The Fairfax County Information Technology Security Policy, the mandated specifications of the Commonwealth of Virginia Information Technology Security Policy and Standards and the HIPAA Security Rule, along with other mandated privacy laws and County internal Audit priorities, are examples of governing legal precedence and policy that dictate a requirement for audit controls to record and examine activity in information systems.

Progress to Date

Work associated with planning and design is started. The required technology tools will be implemented in phases based on infrastructure engineering needs, business function priorities, and legal mandates

aligned with county e-business projects. Implementation started in FY 2005, with completion of base functions targeted during FY 2006.

Project Budget

FY 2006 funding of $450,000 was provided to support the County security architecture, designed to provide an appropriate level of protection for all County information processing resources regardless of technology platform. In FY 2007, an additional $225,000 is provided to continue these implementations. IT security and infrastructure staff are being assisted by consultants that are already augmenting staff in DIT base-line security activities and are currently engaged in on-going network infrastructure improvements as well as the project.

Return on Investment (ROI)

This project will ensure system compliance with security policies, provide for centralized real-time auditing, provide a solution for managing users and their Web application access, ensure timely access to business assets through an authenticated identify, and provide for an immediate response to technology threats. The information security and internal audit offices will have the capability to perform security management audits and analysis centrally across platforms and verify progress in security management protection via software reporting capability. This product will significantly decrease the staff time required for manual auditing and IT security investigations. It will provide enterprise monitoring capabilities for assessment that provide a safeguard that improves reliability and reduces downtime. It will identify non-standard and non-secure systems that are a threat to the security of the infrastructure and County data. This solution addresses multiple regulations with minimum resources by implementing and measuring compliance through automated analysis.

3.6 HUMAN SERVICES

IT0002.6 ATHLETIC FACILITIES SCHEDULING SYSTEM (AFSS)

Project Description

This project is Phase II of the AFSS project. The intent of the project is to expand the current AFSS system to allow the designated sports organization representatives to: submit Community Use applications via the Internet; receive notification of application processing status; view/print their organization's permit on line; submit team rosters and practice and game schedules; make payments online (Credit Card acceptance). Guest users (general public) will have the ability to submit applications online. This project will automate a tedious and cumbersome paper process and reduce the number of forms that need to be completed and submitted each season. In addition, by accepting online payments, this phase of AFSS will enhance revenue collection procedures.

Project Goals

The goal of the project is to maximize technology to reduce the burden on both applicants (Fairfax County residents and others) and staff when requesting community use of a public athletic facility. The entire work flow process for scheduling community use of public athletic facilities will be streamlined. Redundant keying of information will be eliminated. Currently staffs receive hard copy application information and have to both review it to identify any changes and key the changes into the AFSS system. Phase II of this project will pull up the requests, verify that the information is consistent with data standards, and approve the automated transfer of the submitted data to the AFSS Request Module.

Progress to Date

This project is Phase II of the AFSS, and uses the existing vendor for the Athletic Facilities Scheduling System, Xybernaut Solutions Inc., to develop and implement the online registration system. The AFSS Phase II system encountered technical challenges (since resolved) which delayed implementation; however, implementation is scheduled for Spring 2006.

Milestones

- *Detailed requirements analysis, July 2004*
- *Logical and physical design, October 2004*
- *Development of the software for on-line application processing, October 2004*
- *Development of the software for roster submission, October 2004*
- *Testing of the software for on-line application processing, May 2006*
- *Testing of the software for roster submission, May 2006*
- *Development of the software for payment acceptance May 2006*
- *Testing of the software for payment acceptance, July 2006*
- *Acceptance Testing of combined modules and their integration with AFSS ,April 2006*
- *Training of staff on Phase II modules, April 2006*
- *Sign-off for the on-line application processing, roster submission system, delivery of code, July 2006*

Project Budget

Funding of $102,000 for additional contractor services is provided in FY 2005 to complete on-line registration requirements. No additional funding is provided in FY 2006.

Return on Investment (ROI)

Revenues will be enhanced by offering the public the capability to accept online rosters and payments. Response from the athletic community indicates tremendous acceptance of and satisfaction with AFSS and the permits that they receive. The customer using online application processing will benefit from a faster turn-around time to provide space allocation information, as well as increased communication with staff regarding the status of their application. In addition, many applications currently submitted are poorly handwritten and incomplete. This results in inaccurate data due to misinterpretation of handwriting, or returning the application package to the customer for completion. The consequences often are late submissions and very dissatisfied customers.

IT0002.7 HOMELESS INFORMATION SYSTEM

Project Description

This project provides funding to several County Human Services agencies for implementing an information system to track and monitor the homeless population served by the County and the local Continuum of Care (CoC). The FY 2001 appropriation bill for the Federal Department of Housing and Urban Development (HUD) requires that all local jurisdictions' programs receiving HUD grant funds develop a database to store specific data on homeless persons receiving services. This new mandate requires these programs to track and report patterns of use of assistance funded under the McKinney-Vento Act, to provide HUD (at least annually) unduplicated counts of homeless individuals using assistance programs, and to provide data that analyzes the use and effectiveness of those programs. These data will be used by HUD to prepare the Annual Homeless Assessment Report to Congress, and for client-level reporting on client characteristics and outcomes through the Annual Progress Report. Local jurisdictions were required to begin reporting these data to HUD beginning October 2003.

The proposed system includes a single database with Internet access for participating CoC organizations to enter information on client demographics, intake assessment and needs, services provided, and service outcomes. Through this system, client and summary-level data can be prepared for HUD reports to be in compliance with the October 2003 mandate. Since the appropriation bill was passed, HUD has profiled several commercial off-the-shelf (COTS) applications that include this functionality. The Human Services Leadership Team has secured one of these COTS solutions for this project through an evaluation of local CoC needs and subsequent evaluation of the COTS options available. Through oversight from the Human Services Leadership Team and the Homeless Oversight Committee, the project team also considered solutions selected for other localities in the metropolitan area, and identified opportunities for increased coordination across local jurisdictions.

Project Goals

Fairfax County is supported by several active community-based organizations that partner with County Human Services agencies to provide support to the homeless population. This network of organizations works together through committees, partnerships, and other special interest councils. This

project will allow the County to comply with the mandates prescribed by HUD and further enhance these relationships through facilitating sharing of data, and providing a single reporting mechanism to HUD. In addition, these groups expect to improve services, and location of services, based on the information that a shared database will provide.

Progress to Date

County agencies and community-based organizations evaluated proposals received from nine vendors and made their final selection in April 2003. The contract was established and the project began in August 2003. In January 2004, four pilot CoC organizations were trained and began using the new system for live data processing. Six additional organizations began using the system in October 2004, and six additional organizations will begin using the system in October 2005, at which point, all HUD grantees will be reporting data on services for the homeless and the Fairfax CoC will be compliant with HUD reporting requirements.

Milestones

- *Pilot organizations began using the system, January 2004*
- *6 additional organizations began using the system, October 2004*
- *6 additional organizations, including all remaining CoC HUD grantee organizations, will begin using the system, November 2005*
- *Remaining CoC organizations wishing to participate will begin using the system, October 2006*
- *Project roll out complete; maintenance and support phase begins, December 2006*

Project Budget

Funding in the amount of $185,500 was allocated in FY 2003 for the purchase of the hardware, software COTS package, and contractor services for implementation. In house staff was used to prepare requirements, evaluate COTS packages, implement the system, and provide user support. No additional funds are required.

Return on Investment (ROI)

This project allows the County and the local CoC to comply with the October 2003 mandated deadline, and allows County homeless programs to retain current levels of grant funding. The potential for expansion of grant funding is enhanced due to improved program reporting and administration. In addition to meeting the federal mandate, participating CoC organizations will benefit from on-going tracking and monitoring of the homeless population through increased coordination and information flow among programs to improve service delivery, more efficient tracking of service delivery and measuring program effectiveness, improved information to identify service gaps, and to inform program design and policy decisions. Improved program data and coordination will translate into more effective use of federal, state, local, and private funds to support the homeless population in Fairfax County.

IT0002.9 HUMAN SERVICES COST ALLOCATION SYSTEM

Project Description

This project will provide a custom developed system to replace the existing Human Services Payroll Reports (PAYR) system, which automates the allocation of Department of Family Services' and Department of Administration for Human Services' personnel costs to various Federal and State programs. The system serves as the basis for claiming Federal and State reimbursement for more than $40 million dollars of eligible social services expenditures. The primary service needs addressed by this project are continued compliance with approved Federal and State cost allocation methodologies, as well as increasing requirements for data reporting, analysis, collection, storage, and security.

Project Goals

The new system will address limitations in the current desktop database system including issues such as allocating a position to only one Federal or State program, when some positions support multiple programs; the inability to analyze position changes which would allow agencies to reallocate positions and associated costs to maximize various revenue options; and the inability to track historical data of how positions had been previously allocated for audit requirements.

Progress to Date

This project is currently in the requirements definition phase which will immediately be followed by detailed design and development.

Milestones

- *Complete requirements definition, May 2006*
- *Complete design, July 2006*
- *Complete programming, testing, and implementation, October 2006*

Project Budget

FY 2006 funding of $60,000 is provided for implementation of a custom developed system to replace the existing Human Services Payroll Reports (PAYR) system, which automates the allocation of Department of Family Services' and Department of Administration for Human Services' personnel costs to various Federal and State programs.

Return on Investment (ROI)

Cost savings will be realized through a reduction in staff hours spent reconciling data through manual processed to prepare claims for reimbursement and meet audit requirements. The new system will mitigate the potential for future liability associated with claiming Federal and State reimbursement for more than $40 million in expenditures due to the current system's inability to meet increasing Federal and State audit requirements. The ability to easily analyze data will allow users to identify alternative means for allocating costs and increasing reimbursement. Personnel and payroll data will be stored in a more stable, secure environment. There is potential for application across other agencies which claim reimbursement through alternative mechanisms. This potential will be explored during the functional analysis phase of the project.

IT0011.8 DOCUMENT MANAGEMENT & IMAGING - DFS

Project Description

This project will support the transition within the Department of Family Services (DFS) from manual process to file, store and access records using document management and imaging technology. This transition will be determined once more data is gathered from implementing the technology in the Self-Sufficiency division during FY 2005, to leverage the efficiencies gained and where they might best be next applied. This project will use the enterprise document management platform technology to achieve its goals. Imaging workstations will be located in appropriate locations to eliminate the need for paper file processing as well as the resulting storage needs. Ultimately, DFS consumers will benefit through faster, more complete access to case information, and focused, expedient service delivery.

Project Goals

Goals of the project are to provide a reliable and secure system for cataloging, archival and retrieval of sensitive Human Services documents in fulfilling case management needs of County residents, and, improve response times for client inquiries of case records. In addition, the project will allow for the management and preservation of DFS records in accordance with State and Federal mandates, and avoid non-compliance issues associated with the degradation, damage or loss of paper files. Also, this project will address the critical records storage space issues by imaging appropriate and/or key case records, and alleviate a critical records storage space issue by imaging appropriate and/or key case records thus freeing up scarce physical space in the Pennino building for more productive uses. It is anticipated that this document management/imaging capability can be extended throughout other Human Services agencies as a part of an overall strategy for improving workflow and records as appropriate in a strategic goal to more efficiently provide a comprehensive approach to comprehensive service delivery goals.

Progress to Date

This is a multi-year and multi-phased project dependent on the successful completion of Phase I, includes a full-scale requirements analysis to implement an enterprise solution. Critical success factors will involve the implementation of several, interdependent components that address different, but related needs.

Milestones

- *Complete Department of Family Services user group to define requirements, June 2005*
- *Develop a requirements document that will lead to a design plan, September 2005*
- *Finalize the design and development process, March 2006*
- *Procure Hardware/Software , January 2006*
- *Install Equipment, February 2006*
- *Test the Pilot Process, July 2006*
- *Develop a Beta test Implementation Plan, July 2006*
- *Conduct Training, July 2006*

Project Budget

In FY 2005, funding of $1,179,567 will be provided to automate the DFS record/document management processes by installing a document management system that utilizes imaging technology. No additional funding is provided in FY 2006, however, additional funding is anticipated to support the transition of a second division within the Department of Family Services (DFS) to begin using document management technology.

Return on Investment (ROI)

Cost savings will be realized as a result of improved processing of paper documents, improved use of staff time, and improved error rates related to more effective, efficient document management. The new process will provide savings related to the storage of paper documents and files for the agency and the County Archives. With caseloads continuing to increase, this project will avoid the cost resulting from the need for increased storage capacity. 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. Non-quantifiable benefits of this project include improved services to clients both internal and external; increased efficiencies; increased accuracy of records; increased productivity; increased capacity to use available data to leverage resources; and increased opportunities to use existing data for program improvements and quality assurance.

IT0011.10 DOCUMENT MANAGEMENT & IMAGING - OFC

Project Description

This project will provide for the second phase of the Office for Children's (OFC) Electronic Records Management system. In FY 2006, the project will transition Community Education and Provider Services, Head Start and the School-Age Child Care program to document imaging technology. The Community Education and Provider Services division currently processes and stores approximately 6,300 documents each month for all home child care business and the USDA food program; Head Start maintains files for over 500 children and families in multiple locations that could more efficiently be reviewed electronically by field staff and auditors; and the School-Age Child Care Program provides direct services to over 14,000 children in 131 centers. This transition to an electronic system will ensure that citizens receive the most efficient, highest quality of service across OFC program divisions, and that all legal mandates are satisfied regarding record archival and citizen and client privacy.

Project Goals

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

Progress to Date

The initial requirements analysis phase was completed in May 2005. Design, coding, and implementation are scheduled for July 2006.

Project Budget

No additional funding is provided in FY 2006. Additional funding is anticipated to provide for the second phase of the Office for Children's (OFC) electronic records management system.

Return on Investment (ROI)

These funded initiatives of the imaging and workflow project are expected to increase the security of records, protecting them from unauthorized access; reduce staff time required to retrieve and re-file documents; reduce processing time as many of the workflow efforts will streamline the reviews required; provide a viable, accurate document system for old and one-of-a-kind documents; promote telework; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

IT0015 HEALTH DEPARTMENT MANAGEMENT INFORMATION SYSTEM

Project Description

In FY 2002, funding was approved for the replacement of the existing Health Management Information System (HMIS). The former HMIS application, a MUMPS (M 4.4.0A – MSM Unix 4.3.2) application originally installed in 1986, provides the Health Department with the functionality necessary for Intake, Fee Setting, Assessment, Appointment Scheduling, Service Delivery, and Billing/Reimbursement for the following Health Department programs: *Affordable Health Care, Primary Health Care, Personnel, Environmental and Consumer Services.*

Project Goals

This project is in the final of phase implementing the latest version of their clinical health application (AVATAR). In order to complete the project, links to other health systems used by Health Department staff to provide a comprehensive set of services to the public must be established. This will complete the application replacement project. This final phase of this project will provide an interface to the Health Department's new system, AVATAR, from CAP and include functionality to address new HIPAA requirements ,i.e., electronic billing ,documentation of Notice Privacy Practices ,etc. This interface and increased functionality will eliminate the need for users to do data entry into multiple systems and provide comprehensive data in a faster manner.

Progress to Date

The project is divided into four phases. Phase I represent core functionality for patient care and financial services and was implemented in May 2005. The second phase will expand patient care services by implementing three additional health care clinics serving uninsured and underinsured residents and is planned to be implemented in August 2005. The third phase will provide electronic billing capabilities and is expected to be completed by November 2005. The fourth and final phase will provide additional support to the Adult Day Health Centers and is estimated to be completed in March 2006.

Milestones

- *Initial CAP interface specifications, October 2002*
- *HMIS Programming completed, March 2003*
- *Conversion document completed, March 2003*
- *Final CAP interface specifications, October 2003*
- *Programming for CAP interface, December 2003*
- *Testing, training scheduled, April 2005*
- *Implementation of AVATAR core functionality, May 2005*
- *Expanded patient care functionality and CAP interface, March 2006*
- *Full maintenance mode, April 2006*

Project Budget

To acquire the necessary software and consultant services to fully implement this system, $191,433 is funded in FY 2003. Additional funding of $319,000 for additional contractor services was provided in FY 2004 to complete multiple interface requirements. No additional funding is required in FY 2006.

Return on Investment (ROI)

Funding this project allows the County to complete the upgrade of the agency's Health Management Information System by having an interface with CAP and meeting HIPAA compliance. This will eliminate duplicate entry, minimize the risk involving various systems; minimize errors in transcription of data into the client file (maintained in HMIS) and assuring compliance with County-focused policies in relation to patient/client billing and collection of fees.

IT0059 CHILD CARE TECHNOLOGY

Project Description

This project includes re-developing the SACC Registration System as a web-based application, integrating it with the CCARS Accounts Receivable system, adding a module for the Employees' Child Care Center to include registration and billing, and providing access for parents to selected functions through the Fairfax County web portal. SACC Registration is the database that supports a phone registration system for over 14,000 children participating in the School Age Child Care Program. This application tracks information on family demographics, income, child enrollments and account billing. It currently enrolls 9,000+ children in before-school, after-school, and after-kindergarten care. Based on families' income, it assesses fees and calculates discounts based on family size. A file is transferred to DynAccSys to process monthly bills for over $2 million each month for SACC services.

Project Goals

The major goal is to establish an efficient system that will maximize enrollment and revenues. Since SACC Registration currently has limited support and an old Power builder platform which needs to be replaced. The strategic direction includes online registration and 24/7 access. A new system will fulfill these objectives as it will exhibit up-to-date technology and provide convenient access to customers.

Progress to Date

Phase I of this project, which included Contractual Amendments, Enrollment Requirements, and Group 1 reports is completed. Account maintenance and Group 2 reports will be completed by June 2006. The remaining phases (listed below) through implementation will be completed October 2007.

Milestones

- *Enrollment and Account Maintenance Requirements Analysis, completed December 2005*
- *Detail Design and Software Development, January 2006 – June 2006*
- *Training and Acceptance Testing and Deployment, September 2006 – November 2006*
- *Online Parent Access and ECCC Registration Requirements Analysis and Group 4 Reports, January 2007 – March 2007*
- *Detail Design and Development for Online Parent Access and ECCC Registration April 2007 – June 2007*
- *Deployment for Online Parent Access and ECCC Registration – May 2007*
- *Final Conversion to Production and Support, June 2007*
- *Project Evaluation, July 2007 – August 2007*

Project Budget

FY 2005 cost is estimated at $550,000 for contractor support and services. DIT staff will provide support for the technical aspects of this conversion.

Return on Investment (ROI)

With online registration processing, savings would be realized in comp time and overtime earned by the staff during peak times. Future expansions of the SACC program could be handled without additional registration staff. Easy accessibility will allow citizens to enroll and cancel services through the web. This in turn will allow slots to be filled quickly which will increase revenues for the County. This solution will provide up-to-date technology, faster service to citizens thereby focusing more on service delivery. Other efficiencies include registration information access for all field staff from 130 SACC centers.

IT0059.1 CHILD CARE WIRELESS TECHNOLOGY

Project Description

This project supplies Child Care Specialists and Fire Department Inspectors with wireless tablets for use during these home visits. This technology will include the successful transfer of inspection information into the Office for Children Information System. Currently, Specialists and Fire Inspectors take manual notes and fill out forms and checklists, then return paperwork to the office for later data input. This system causes a significant lag in the time it takes for data collected during home visits to be assimilated into the agency's databases. This time lag in turn delays the process of renewing Family Child Care Permits and in collating data required to receive reimbursement from USDA. Accomplishing the renewal of permits on a timely basis is essential in order for family child care providers to continue to care for children. Frustration with the current process leads to a loss of providers, seriously affecting the critical shortage of child care available for working parents in Fairfax County. This project is part of the overall OFC strategy to recruit and retain additional child care providers. The Office for Children has worked to reduce the process it takes to obtain a permit. Criminal background checks can be processed in 24 hours and CPS checks have been reduced from 30 days to 14 days. Increasing the speed in which a permit can be issued improves the quality of service to providers and the families in Fairfax County seeking child care.

Project Goals

The goals of the Wireless Tablet Project include reducing the time for a provider to receive a permit, reducing the time it takes for a child care provider to receive USDA eligibility, initiate real time data information available during home inspections, significant reduction in paperwork, reduction in reliance on a manual system for issuing permits, improving the overall quality of child care by allowing Specialists to spend more time on technical assistance.

Progress to Date

Child Care Wireless Technology Project was migrated to production January 2006; however, the DIT pilot portion of this project with wireless tablets will continue as minor modifications are made.

Milestones

- *Initial Hardware Procurement, complete September 2005*
- *Software Installation and Testing, complete October 2005*
- *Training, complete November 2005*
- *Reliability and Functional Testing, Complete December 2005*
- *Acceptance, complete January 2006*

- *Project Completion, February 2006*
- *Project Evaluation and Post Implementation Adjustments, February 2006 – May 2006*

Project Budget

The FY 2005 cost is estimated at $200,000 for hardware and contractor support and services. DIT staff will provide support for infrastructure and technical aspects of the project. No additional funding is requested in FY 2006.

Return on Investment (ROI)

Through this technology, the County will be able to streamline work and administratively enhance processes, improve productivity, and reduce reliance on a manual system for issuing permits. This new technology will reduce costs associated with printing, storing, and archiving of paper applications and forms. Reduced need to travel to the government center has several cost and environmental benefits. As the County recruits and retains more child care providers, Fairfax County becomes an attractive option for businesses looking to relocate or expand which in turn will bolster the tax base.

IT0069 INTEGRATED HOUSING MANAGEMENT SYSTEM

Project Description

Housing and Community Development (HCD) will soon be deploying a new comprehensive housing management system, a result of a redesign effort consolidating 17 programs, six computer systems, six separate databases, and a host of manual processes. This effort will streamline requirements for HCD's compliance with U.S. Housing and Urban Development's (HUD) reporting structure, incorporate all HCD partnership program financial information on one technology platform and enable for project-based reporting requirements for all Public Housing Authorities. Much of the data for the new system can be automatically extracted from the existing County financial and procurement system, eliminating manually entering data which can result in the reporting of inaccurate data or the omission of pertinent financial data.

Project Goals

Overall project goal is to automatically extract information from the existing corporate enterprise systems, eliminating the current manual process of entering data which often results in the reporting of inaccurate data or the omission of pertinent financial data.

Progress to Date

New FY 2006 Project

Milestones

- *Initial Hardware Procurement, May 2005*
- *Software Installation and Testing, October 2005*
- *Training, October 2005*
- *Reliability and Functional Testing, October 2005*
- *Acceptance, December 2006*
- *Project Completion, December 2006*
- *Project Evaluation and Post Implementation Adjustments, May 2006*

Project Budget

FY 2006 funding of $160,000 was provided to develop an interface between the financial module of the HCD management system and the County's financial and procurement systems. Additional funding of $222,500 is provided in FY07 to complete the interface and ensure compliance with HUD mandates.

Return on Investment (ROI)

The savings for HCD and the County for this project are related to staff time. Currently, there are several HCD Finance Department staff who must dual-enter financial information. Cost savings will be realized by the decrease in compensatory pay and overtime. Clients will receive better customer service when they request information about payments they have made or Housing Assistance payments they are to receive. This project will allow Housing Management staff access to up-to-date information remotely to improve customer service. In addition, landlords and housing assistance clients will be able to access this information through the Web. Payments will be processed as they are needed, instead of the weekly batch processing which is currently being done. Landlords receiving rental payments and clients receiving utility assistance will receive their payments in a timely manner. Capital project expenditures will be able to be monitored more closely by project

managers, potentially decreasing the risk of overages. Each housing project and program's financial situation will be able to be monitored individually, allowing Housing Management to make more informed decisions regarding performances.

IT0073 URBAN DEVELOPMENT INFORMATION SYSTEM (UDIS)

Project Description

The purpose of the project is to replace the obsolete Urban Development Information System (UDIS) and create a cross-functional data repository to better harness the value of the land parcel information the County maintains and making that information more accessible across County agencies. This information includes population and housing unit estimates and forecasts which are used by the County to help determine services and service provision levels, respond to state and federal reporting requirements, and respond to regional initiatives such as transportation planning, air quality modeling, and other programs of regional significance.

UDIS is used to process spatial information about land parcels from a number of non-integrated sources and produce housing estimates and forecasts, population estimates and forecasts, market value estimates for owned housing, non-residential gross floor area estimates and current and planned land use summaries. Design of the new UDIS will better integrate data across multiple County agencies and systems, and will provide for increased functionality for using the data more efficiently including a more granular analysis of parcel data.

The existing UDIS, an amalgamation of interfaces and reports, had forced County staff to maintain and write software patches for programs that no longer work and supplement missing information through manual intervention. It has exceeded its useful life and is very labor and time intensive to maintain. The new system will have a modern process that captures data regardless of system or format, and will use the County's GIS system as a data foundation.

Progress to Date

New FY 2007 Project.

Project Budget

FY 2007 funding of $820,000 is provided to complete the development of the system and automate report generation, which currently requires manual integration of data.

Return on Investment (ROI)

This updated system satisfies an ongoing requirement to analyze and provide demographic analysis to the Council of Governments and County agencies. The primary customer for this application is the Research, Analysis, and Project Services branch of the Department of Systems Management for Human Services. The Demographers in this branch have the responsibility of preparing detailed population forecasts for submission to the Council of Governments and the federal government. The current UDIS system will be unable to function when the mainframe databases it currently uses are off-line. A more user-friendly and accessible application would also be utilized by other agencies that require demographic analyses and projections, including the Department of Planning and Zoning, the Fairfax County Public Schools, and the Police Department.

IT0075 PARTICIPANT REGISTRATION SYSTEM

Project Description
This project will allow the Department of Community and Recreation Services (CRS) to implement a centralized, web-based participant registration and tracking system at all community centers, senior centers, and teen centers. The current manual and outdated method of registering and tracking participants leads to inconsistent data reporting, participant confusion and complaints, and programmatic disruption. Implementation of a centralized system will significantly address these issues. Under the planned system, participants will be issued identification cards with bar codes that they will scan upon entrance to any CRS center. This will enable staff to verify program/center eligibility and track participant attendance at both the center and the individual activities offered at the facility. The system will also interface with existing financial systems in order to manage program and related fees. CRS will be able to use the data recorded in the system to meet state and local reporting requirements, and to assist in program development and strategic planning. The system will also ensure the security and confidentiality of participant information.

Progress to Date
New FY 2007 Project

Project Budget
FY 2007 funding of $300,000 is provided.

Return on Investment (ROI)
This effort will improve customer service and efficiency, ensure accurate data reporting, and improve data security. This project will significantly reduce the burdonsome paper registration process that currently exists for the public. Participants will no longer have to wait in lines to sign paper attendance sheets. The centralized information will provide for better and more accurate data reporting and will ensure that confidential participant data is protected. Additionally, a reduction in the staff time required to process registrations and compile data for reporting purposes is expected.

IT0076 INTERACTIVE WEB INAKE PROGRAM ENHANCEMENTS

Project Description
This project provides support for the Interactive Web Intake program at the Department of Housing and Community Development (HCD). In March 2004, the HCD launched a new Web application giving clients access to services on a 24/7 basis. Currently, HCD collects only enough information through the Web to place its applicants on appropriate waiting lists. There is no capability for applicants to update information, so the process reverts back to filling out dozens of forms and requires time consuming data entry. Furthermore, participants must complete paper-based, annual re-certification packets, including income verification authorizations. FY 2007 funding of $130,000 is provided to enhance the interactive Web application, including the opportunity to apply online in multiple languages.

Progress to Date
New FY 2007 Project

Project Budget
FY 2007 funding of $130,000 is recommended for this effort.

Return on Investment (ROI)
By engaging the applicants in data entry, cost savings will be realized through reduced call support, reduced front counter engagements, reduced copying costs, and reduced paper storage and archiving. HCD anticipates that the savings will reduce staffing needs by one full-time SYE in its application center. In addition, the web intake program will allow HCD to streamline its waiting lists and be able to offer rental properties to applicants that are more suited for the available units. The reduced turnaround time will minimize the time that rental units are vacant, increase overall revenue, and enable property managers to maximize resources.

3.7 PLANNING AND DEVELOPMENT

IT0011.12 COMPREHENSIVE PLAN/ZONING ORDINANCE AUTOMATED WORKFLOW

Project Description

The Comprehensive Plan is a 5-volume document comprised of over 2000 pages of text and more than 1000 graphics in the form of maps. The Plan text currently exists as several Microsoft Word files. The graphics are stored as 220 dpi bitmap files which are inserted into the Word files. The Word documents are currently considered unstable due to several generations of conversions from legacy word processing applications. The Plan is amended multiple times during the year as amendments are approved by the Board of Supervisors and the Planning Commission. A Document Management System (DMS) will provide an audit trail for these amendments that is necessary to conduct research on Plan history to determine when a particular amendment was adopted. This audit trail will make research more efficient. The Zoning Ordinance exists as several Word documents for a total of approximately 1500 pages of text and seven pages of graphics. Similar to the Comprehensive Plan, the Zoning Ordinance is updated on a regular basis as amendments are adopted by the Board of Supervisors and the Planning Commission.

Project Goals

The workflow component of a Document Management System will save staff time and reduce paper by allowing for an electronic circulation of draft staff reports, amendments, memos, letters, and other staff documents for review, editing and approval. DPZ staff work results in the production of many types of documents such as paper copies for publication or distribution to the public, as well as Web pages and other electronic products. A DMS will increase efficiency in the production of staff work. It would also improve the speed at which staff can make updates to the Plan available. Currently the Plan exists on the Web as approximately 40 large PDF documents (most from 2 to 5MB in size). The Zoning Ordinance exists on the Web as approximately 30 PDF documents. A hybrid Web Content/Document Management System will offer improvement in presentation, search functionality, and performance for both the Comprehensive Plan and Zoning Ordinance on the Web.

Progress to Date

Staff has preparing preliminary process flows for both the Comprehensive Plan review and amendment process and the Zoning Ordinance amendment process.

Milestones

- **Requirements Analysis Phase** – Conduct discussions with contractor to document the requirements for the Document Management System. Requirements will cover application security, user interface and navigation, search, versioning and infrastructure.

- **Design Phase** – Work with contractor to prepare design documentation to address any application configuration and customization items that have been identified during the requirements analysis phase. Contractor will also provide a design for the technical infrastructure required to support this application.

- **Development Phase** – Work with contractor to conduct any required application configurations and/or customizations. This may include development of an object model, security model, changes to the user interface, etc. Work with contractor to conduct the required software installations in the County's environment(s).

- **Testing Phase** – Work with contractor to facilitate the County's testing of the solution within the County's environment.

- **Training Phase** – DPZ will work with the contractor on training DPZ and other relevant County staff.

- **Deployment Phase** – This phase covers the transition of the application from a test environment into the production environment.

Project Budget

FY 2006 funding in the amount of $244,200 is included.

Return on Investment (ROI)

A Document Management System (DMS) will save staff time and reduce paper by allowing for an electronic circulation of draft staff reports, amendments, memos, letters, and other staff documents for review, editing and approval. DPZ staff work results in the production of many types of documents such as paper copies for publication or distribution to the public, as well as Web pages and other electronic products. A DMS will increase efficiency in staff work. It would also improve the speed at which staff can make updates to the Plan available. The current system used for management of the Comprehensive Plan (the Plan) and Zoning Ordinance are outdated and do not take advantage of the level of technology used in many "e-Government" organizations today. A move to a hybrid Web content/Document Management System will provide Fairfax County with a state-of the art solution for presentation, management, storage, retrieval and archiving for the Plan and the Zoning Ordinance both in-house and on the Web. The acquisition of a hybrid Document Management System (DMS) is in line with the Board's desire to become a paperless e-Government entity.

IT0055 FAIRFAX INSPECTIONS DATABASE ONLINE (FIDO)

Project Description

The Fairfax Inspections Database Online (FIDO) project replaces the legacy mainframe Inspection Services Information System (ISIS) in DPWES and multiple stand alone databases in other agencies. This new system will provide a foundation for future e-government applications related to land development, building construction, fire inspection services, environmental health services, and complaints management. This multi-agency project enables data sharing between agencies and enhances one-stop-shopping for the customer. The implementation of FIDO is integral to the County's effort to automate and enhance the land development systems that began in FY 1992. The enhanced cross-agency information flow provided by the new system will significantly simplify the permitting process and improve timeliness of permit review and issuance by creating a virtual one-stop shop consisting of multiple review agencies. It will meet the ever-increasing demands of customers to make the permitting process simpler to understand, more convenient to use, more efficient, more predictable and timely. The new system will also enable staff to develop a focus and orientation towards individual construction projects as opposed to maintaining a focus on the permit process itself.

Project Goals

The goal of the FIDO Project is to provide a single database solution that meets the needs of the involved agencies in shared and similar processes. The new system will be integrated with numerous systems including the Land Development System (LDS) to provide a more seamless process throughout the lifecycle of construction projects. Other goals for this project include automating and incorporating similar manual functions performed by the Fire Prevention Division and the Environmental Health Section that are not available using the older independent systems currently in place. The primary business goal is to enhance customer service by streamlining the permitting process, reducing the timeframes for permit issuance, plan review, and inspections, and allowing the customers and County agencies more direct access to the permitting process and data.

The primary technology goal for the FIDO Complaints Management System has been to replace the outdated complaint tracking systems used by Department of Planning and Zoning (DPZ) and the Health Department. The new complaints management module is expandable and will allow other user agencies share data more efficiently and to work collaboratively in resolution of complaints and code violations. The new system provides Web capabilities and includes a Geographic Information System (GIS) component.

Progress to Date

The initial phases of the Fairfax Inspections Database Online (FIDO) project have been successfully implemented and are in production. The new system has replaced two legacy complaint tracking systems used by the Zoning Enforcement Branch of DPZ and the Community Health Safety Section of the Health Department. FIDO is currently being used by these agencies to investigate complaints regarding alleged violations of County's Zoning, Noise, and Health and Safety Menace Ordinances. Additionally, the contractor licensing phase of the FIDO project has been completed and is also in production. The

licensing module features system interfaces with both the State's Contractor Licensing database and the Fairfax County Business License database; allowing the state mandated license verification process to be streamlined for permit issuance. The FIDO licensing module also replaced antiquated contractor licensing systems used by DPWES and the Health Department for the issuance of local licenses. FIDO replaced the mainframe-based ISIS system in March 2006; follow-up tasks related to this implementation are in progress.

The Land Planning and Development Project Steering Committee and multiple cross-agency workgroups continue to meet regularly to provide guidance and to assist in developing system requirements and implementation. In FY 2004, the focus for the project was to assess the quality of the proposals submitted in response to the multi-agency RFP. The assessment process included formal presentations by the top-rated vendors and the use of four daylong demonstration labs to provide users the opportunity to evaluate features offered by the various products. Based on the review and evaluation process, a contract was awarded to Hansen, Inc. for the permitting and complaints management system solution that also fits well into the County's e-government strategy.

The project continues in FY 2007. The deliverables include the implementation of the Permits and Inspections Modules at the Fire and Rescue Department and the Health Department's Environmental Health Division. Wireless field inspection systems will also be developed for FRD and the Health Department.

Milestones

- *Requirements analysis, April – December 2001*
- *Release of Request for Proposal, February 2002*
- *Selection of top-rated vendor, December 2002*
- *Contract Award, March 2003*
- *Purchase of the Hansen COTS suite of Software, April 2003*
- *Implementation of DPZ Complaints Management System (Phase 1), September 2003*
- *Implementation of Contractor Licensing Module (Phase 2), January 2004*
- *Begin Configuration of Building Code Services (Phase 3), February 2004*
- *Integration of the new system with the LDS database, December 2004*
- *Migration of existing Permit and Inspections data to the new system, November 2005 – February 2006*
- *Design and Installation of Dynamic PORTAL for Permits and Inspections, July 2005 – February 2006*
- *System Testing, throughout lifecycle of project*
- *User training and system administrator training Phases 1-3, July 2003 – April 2006*
- *Final System acceptance and implementation, April 2006*
- *Traditional ISIS Replacement, Permitting, Plan Review, Inspections, Spring 2006*

Project Budget

Project funding of $285,376 will create a mobile, wireless field inspections module in FIDO for use by Health Department inspection staff, enabling them to input data directly from the field and share this data with other FIDO users in real time. This funding will also support additional software reporting licenses for the Health Department to generate reports.

Return on Investment (ROI)

Savings will be realized through a streamlined system that will enable the development and construction industry to work more productively within the County and in turn enhance the tax revenue base. The development and construction industry will recognize significant cost reductions that are presently incurred due to construction delays and delays in occupancy or use of buildings. The County's revenue stream is also enhanced by increasing the speed in which commercial and residential buildings are processed through the system and brought to completion, i.e. the sooner buildings, homes and tenant spaces are completed, the sooner they become a source of revenue for the County. The development and construction process of the County will be perceived as being more business friendly and will attract additional businesses to bolster the tax base. It should also be noted, that the replacement of the ISIS system was necessary to create a platform for future e-permitting and e-government initiatives that may more directly enhance revenue (e.g. charges for access to data, charges for enhanced optional services, etc.). Additionally, national funds and grants for future applications may be available if the County has a permitting platform on which new technology can be implemented.

IT0063 FACILITY SPACE MODERNIZATION

Project Description

This is a multi-phased project to upgrade the county's conference center (shared conference rooms in the Government Center) and meeting rooms in County buildings with technically advanced conference/meeting capabilities to allow users to have automated support for a variety of meeting purposes, and fully engage in collaborative events. This project removes deficiencies to facilitate effective and efficient group discussions by adding technology and streamlining the room preparation process. The largest rooms in the Conference Center will be outfitted with technical equipment. County agencies, boards, authorities, commissions, nonprofit organizations and civic associations will be able to conduct training, deliver presentations and hold more effective collaborative sessions, and eliminate the need for ad-hoc equipment set up and preparation. Audio/ visual equipment will be accessible, available and ready to use without needing staff set-up time. Customers will no longer need to provide their own projection or A\V equipment, or endure wait time while equipment is found and set up for them. The project will optimize use of County resources such as time, personnel and space to effectively and efficiently conduct County business. Additionally, the project will support Fairfax County's Telework Program by enabling participation in meetings from locations away from the workplace.

Project Goals

The mission and objectives of this project are to provide state of the art technology to allow customers to fully engage in collaborative events. The project will enable leaders and managers to utilize County resources such as time, personnel, and space to effectively and efficiently conduct County business and educate/train its employees. It is consistent with the mission of the County to provide comfortable/livable meeting spaces and to connect people and places. Additionally, the project will support Fairfax County's Telework Program by enabling participation in meetings from locations away from the workplace.

Progress to Date

The initial conference room was implemented in FY 2005. The second phase of will commence in FY 2006.

Milestones

- *Develop project requirements, April 2005*
- *Request For Proposal issued, July 2005*
- *Contract Award, September 2005*
- *Vendor purchase, install and test equipment, October 2005*

Project Budget

FY 2005 funding of $100,000 provided the start-up required to allow Fairfax County Conference Center customers to fully engage in collaborative events. FY 2006 funding of $99,208 is provided for the second year of the project to upgrade and modernize existing government center conference rooms, equipping them with the latest technology.

Return on Investment (ROI)

This project will improve communication capabilities for internal and external meetings, additional augmentation for collaborative crisis management and emergency response, work force training and development activities in an effective and efficient manner, and provides flexibility for and visual equipment for Conference Center users. Cost savings will be gained by the reduced County staff time required to prepare a room for a meeting/presentations on ad-hoc basis. Based on FY 2004 experience of one hour setup and 30 minute take down for each room, (with a $35 average staff hourly rate and 3,000 large meetings could generate the staff time value in savings of $157,500 annually). The County will avoid the need for each agency to invest in additional audio visual equipment and again reduce travel time and associated cost.

IT0064 PROFFER DATABASE AND STATUS SYSTEM

Project Description

The Proffer Database and Status System (PRODSS) will create a system for management of proffers. This project will include the design and implementation of a database to ensure that County agencies, the Board of Supervisors, and the public have a way to research proffers effectively and to track their fulfillment as a project progresses. The objectives of PRODSS are to monitor the status of the implementation of proffers, enable triggers which alert the Department of Public Works and Environmental Services (DPWES) and other agencies when a proffer is due, and to keep an accurate and timely accounting of the fulfillment of proffers.

Project Goals

The primary goal of PRODSS is to enable County, the Board of Supervisors, and the public to track, research and review proffers more efficiently. Enhancements include the ability to monitor the status of the implementation of proffers, to implement triggers which alert DPWES and other agencies when a proffer is due, and to keep an accurate and timely accounting regarding the fulfillment of proffers.

Progress to Date

FY 2005 funding provided for the initial phase of the project which included a requirements analysis, assessment of existing systems, business process redesign and high level database design. Land Development Services and associated agencies involved in the land development process (the Department of Planning and Zoning, the Department of Transportation, Fairfax County Park Authority, Department of Housing and Community Development, Department of Finance, Fairfax County Public Schools, and the Department of Information Technology) are currently working together on the system design phase of this project. The requirements analysis and systems assessment deliverables for this initiative are completed; work continues in the areas of business process improvement and technical architecture recommendations.

Milestones

- *Requirements analysis and review of existing County proffer business architecture, September 2005*
- *Assessment of existing systems/proffer support capabilities, November 2005*
- *Recommendations to improve the current business process to ensure proffer fulfillment and effective interaction with proposed system, January 2006*
- *Recommendations to implement an appropriate technical architecture to meet proffer business data requirements, March 2006*
- *Selection of vendor for system construction, June 2006*
- *System construction, July 2006 – April 2007*
- *Testing and training, May 2007 – November 2007*
- *System implementation, December 2007*

Project Budget

FY 2005 funding of $188,700 was provided to support the design of a database to make proffers easily accessible to all those who create, enforce, research, and track proffers. Additional FY2006 funding of $450,168 provided for the system construction phase of the project. FY 2007 funding of $137,715 will complete the project.

Return on Investment (ROI)

Though additional time will be required to enter data into the database, review staff will spend significantly less time researching paper records to determine the existence and fulfillment of proffers. The county will avoid potential costs associated with failure to enforce or implement a proffer. Staff will input data on proffers electronically; status on proffers will be available electronically, improving access to citizens, the board of supervisors, and developers. Proffer triggers such as RUP and Non-RUP estimates will be automated. An up-to-date accounting of proffer status will be maintained.

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 Division (FMD) and the Fairfax County Park Authority (FCPA). An updated system will increase the effectiveness and efficiency of staff and the 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 state of the art Computer Integrated Facilities Management System. FMD and FCPA 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. The maintenance aspect must be fully integrated with the management of those assets by encompassing all of the functional components and activities that support Lease Management, Space Management and scheduling, Inventory Control, Grounds Management, Contracts Management, Utilities Management, Physical Security, and Emergency Preparedness/Disaster Recovery. By implementing a web based, "one stop shop" for facilities information, we will be able to improve internal efficiencies as well as provide more accurate, complete 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

The first phase commenced in FY 2005 in FMD. The second phase will commence upon completion of Phase I in October 2005.

Milestones

- *RFP Issued, August 2004*
- *Vendor Demos, December, 2004*
- *Contract Negotiations, May 2005*
- *Contract Issued, June 2005*
- *Develop implementation strategy, July 2005*
- *Identifying hardware needs / Procurement, August 2005*
- *Application Installation, Oct. 2005*
- *Requirements Analysis, Process adjustments, November 2005*
- *Data Mapping/Conversion, November 2005*
- *Acceptance Testing of System, February 2006*
- *End User Training, March 2006*
- *Phase I - Post implementation Support, May 2006*

Project Budget

In FY 2005, funding in the amount of $792,250 was provided for FMD to replace their existing Maintenance Management System (*which covers work orders and asset inventory*), update the current hardware/software capabilities and enhance customer use of the data. FY 2006 funding of $548,750 provides for a partnership between FMD and the FCPA to pursue a joint system, enabling the FCPA to retire their 16 year-old, out-dated facility management system.

Return on Investment (ROI)

Extensive savings will be realized through the streamlining of communications and processes throughout FMD and the Park Authority, the most quantifiable savings derived from time saved by field personnel (crafts, trades and grounds personnel) and Work Control Center staff within the agencies. The replacement system will provide bar coding and wireless technology to greatly improve the speed and consistency of data collection necessary to better utilize field staff by the elimination of excessive hand recording of information that is entered into the system at a later time and/or by a different individual. Accurate and timely data collection plays a vital role in improving time management for field staff and will ultimately work to extend the life cycle of equipment. Improved data collection in the field, along with a web based customer request and inquiry interface will save time for staff in terms of handling customers' status inquiries and work order processing from initiation to close out. With the implementation of this system, duplicate work orders, work performed by vendor for inventory that is under warranty and multiple tasks on a work order will all equate to savings by cost avoidance.

IT0067 STORMWATER MAINTENANCE MANAGEMENT SYSTEM

Project Description

This project will consolidate a number of stand alone databases used for work order, complaints and infrastructure inventory in the Maintenance and Stormwater Management Division (MSMD) into one streamlined, integrated work management system. Data is currently captured in multiple, mostly stand alone, applications, some of which are in old technology programs and unable to be run on a network. Most of the data is not linked, requiring repetitive input of information, costing staff time and increasing the likelihood of input error. Non-integrated data also makes it difficult to consolidate and provide information necessary to meet mandated reporting requirements.

Replacement of existing databases with an integrated, web-based system will tie together work orders, materials, equipment, complaints, GIS and infrastructure inventories; allow data sharing across agency and with partner agencies (e.g., Stormwater Planning, Wastewater Collection, and Land Development in the Department of Public Works and Environmental Services, the Fire and Rescue Department, the Health Department, and the Department of Transportation); result in better customer service by allowing residents, Board of Supervisor member offices, and others easy web-based access to information concerning complaint status, work order status, and infrastructure maintenance history by location (e.g., history of flooding at a particular site).

Project Goals

Project goals seek to increase operational efficiency by streamlining the work order, inventory tracking, and reporting processes; improve decision-making through the increased availability of pertinent information and enhanced analysis; provide a tie-in to GIS of the storm drainage data and work orders, and also allow cross-referencing of inventory with other GIS data layers, creating maps for work orders, providing more detailed information to staff and customers; reduce data entry to reduce errors and allow better quality control/quality assurance of data; provide better tracking of "trouble spots" (i.e., systems or structures with recurring maintenance problems); consolidate reporting capabilities for budget preparation and performance measurements; tie-in to the County's procurement system, CASPS, to capture materials and it's personnel system, PRISM, to capture labor, against work orders, rather than re-entering same data into both systems.

Progress to Date

Requirements analysis to commence March 2006.

Project Budget

FY 2006 funding of $335,993 will consolidate a number of stand alone databases used for work order, complaints and infrastructure inventory in the Maintenance and Stormwater Management Division (MSMD) into one streamlined, integrated work management system. Data is currently captured in multiple, mostly stand alone, applications, some of which are in old technology programs and unable to be run on a network.

Return on Investment (ROI)

The benefits of an integrated system include reduced operational costs, migration of aging legacy systems to a modern database, integration of agency data, decreased reliance on preprinted forms and photocopies, an improved level of completeness and accuracy in data collection efforts and improved access to information for decision making. The benefits cannot be obtained with the current technologies and applications. Data will only be entered once at the source. Cost savings will result from the elimination of data entry redundancies existing between the present materials, daily labor time entry and work order databases. Web-based customer complaint/maintenance request and customer inquiry interface will save time for staff in terms of handling customer's initial reporting of problems, status inquiries and work order processing from initiation to close out. In addition, the proposed system will provide public access to data in appropriate cases such as on-line complaint/maintenance requests and work order status, thereby eliminating significant call-taking functions, as well as providing customers direct access to data.

IT0068 HOME OCCUPATION PERMITTING SYSTEM

Project Description

A Home Occupation Permit is issued by the Zoning Permit Review Branch and is free of charge. About 800 HOPs are processed annually by the Department of Planning and Zoning. Permit issuance is contingent upon the applicant's acceptance of these use limitations and failure to comply can lead to revocation of the permit by the Zoning Administrator. This project will streamline processes within the Department of Planning and Zoning, Zoning Permit Review Branch into one system; and provide access to the information within one system, as Building Permits are already accessed through FIDO. Article 10 of the Fairfax County Zoning Ordinance allows certain businesses and occupations to be conducted in a dwelling unit as a home occupation provided a number of limitations are met. Some examples of permitted home occupations are offices for artisans, cleaning services, computer design services, authors, and home crafters. No clients or customers are permitted with a home occupation. The one exception to this standard is a school of special education (e.g., piano or dance instructor) in which a limited number of students is permitted in the home.

Project Goals

Convert an existing mainframe system for Home Occupation Permits (HOPs) to a permitting system that will be incorporated into the existing Fairfax Inspections Database Online System (FIDO).

Progress to Date

Requirements analysis on-going.

Project Budget

FY 2006 funding of $163,800 is provided to convert an existing mainframe system for Home Occupation Permits (HOPs) to a permitting system that will be incorporated into the existing Fairfax Inspections Database Online System (FIDO).

Return on Investment (ROI)

The primary benefit with this project is an increased efficiency for processing a Home Occupation Permit and the fact that staff would be able to access all permits from one system, improving efficiencies and effectiveness. There are currently three ways for a customer to obtain a Home Occupation Permit: apply in person, via Fax, or via mail. In the future it is anticipated that this would be an ideal candidate for an e-permit function over the County's Internet. This would enhance customer service even further.

IT0077 LAND DEVELOPMENT INDUSTRY ENHANCEMENTS

Project Description

In FY 2005 the Board of Supervisors approved a series of fee increases for Land Development Services (LDS). The industry supported these increases and requested that, as part of their support, the Land Development Process Improvement Initiative be created. The Initiative is a partnership among Fairfax County government, the Northern Virginia Building Industry Association, the National Association of Industrial and Office Properties, and the Engineers and Surveyors Institute. The committee was tasked with evaluating and recommending improvements to the County's land development process. The Board of Supervisors endorsed this initiative, requesting that reports on the initiative's recommendations be made to the Board's Development Process Committee in January 2006.

These recommendations included technology and policy/programmatic improvements. They suggest exploring the implementation of queuing management and customer flow software that can better manage the flow of transactions and throughput. The queuing system would provide an automated numbering system linked to the Fairfax Inspections Database On-Line (FIDO). The queuing system will also inform staff that someone is waiting for a particular category of service and track customer wait time. The customer will be directed by display systems where to go next. The system will generate metrics on service levels to assist in staffing decisions. Other recommendations include online capability for Engineers/Developers to review comments from Site Review in Land Development Services (LDS) and other review agencies. In addition, triggered and automatic e-mails will provide Engineers/Developers notification of site-related plans that have reached certain milestones in the life cycle of the plan.

Project Goals

The goal of this project is to expedite the process by which site-related plans are cycled through plan intake, review, and multiple resubmissions. This system is planned to be completed over a two year time period.

Progress to Date

This is a new FY 2007 project.

Project Budget

FY 2007 funding of $250,800 is provided to support various technology improvements that originated from the committees' recommendations.

Return on Investment (ROI)

Automatic notification will significantly streamline the process for industry and relieve some of the workload of County staff. Engineers/Developers and their staff must travel to the County to physically retrieve their comment letters from reviewers. This results in project delays and inefficient use of time. Enabling Engineers to download comments from the web will be a significant improvement to customer service. Currently, most outside agencies send their comments by courier. The courier generally operates only a few times a week. There are approximately 20 agencies involved in the review of site-related plans. Having comments available electronically to both applicants and County reviewers will significantly improve the efficiency of the exchange of comments and the review process as a whole. The queuing system will better manage the flow of customers and staff and will have a significant impact on wait times. Currently, the variability in types of permit applications to come in from day-to-day or at different times of the year can be difficult to manage due to the variability in types of permits and the knowledge level of customers and technicians. Furthermore, not all technicians are proficient in processing all permit types. There is a wide range in the complexity and processing time of individual permit types. Optimizing customer flow will improve customer service and will create a more relaxed atmosphere for all customers and for staff as well.

MANAGEMENT CONTROLS AND PROCESSES

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SECTION 4
MANAGEMENT CONTROLS AND PROCESSES

4.1 IT Management Framework

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). By consolidating several separate County organizations already involved with application programming, infrastructure, data center operations, telecommunications, Geographic Information Systems (GIS), mapping and technical training, the Department of Information Technology was formed. The new DIT also included centralized resources for system security, standards, architecture, e-government, technology planning and administration.

The ITAG further recommended that:

- 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 County-wide 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 budgets.

When ITAG recommended the technology modernization fund, it recommended funding of approximately $20 million per year. This fund provides money for the software, hardware and services included in the County's major IT projects. The modernization fund represents the County's enterprise wide and key departmental projects, which are closely tied to business process improvement and strategic goals.

ITAG also recognized that larger County departments would still need to retain some IT staff in addition to utilizing central DIT resources and that some projects would be better handled by the department rather than DIT. For these departments DIT would serve as a consultant, mentor or project partner. But departmental IT standards, planning and budgeting would still follow the direction of the CIO to ensure consistency and investment value.

Based on the initial ITAG recommendations, the following initiatives have been implemented successfully:

- *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)*
- *creation of a technology modernization fund (FY 1996)*
- *annual technology project review as part of the budget process (FY 1995)*
- *funding for technology training (FY 1996)*
- *project steering committees, formal project reporting and governance (FY 1996)*
- *creation of a permanent private sector advisory group (FY 1998)*
- *creation of an internal Senior Management IT steering committee (FY 1999)*
- *project manager certification (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)*
- *strengthen and reorganization of IT Security leadership and 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 to address regional homeland security interoperability requirements, and creation of a position dedicated to integrated Public Safety and Emergency Management strategy (FY 2005)*
- *establishment of a Public Safety IT Governance Board (FY 2005)*
- *renamed CIO position Deputy County Executive (DCE) for Information Departments (FY 2006)*
- *establish Deputy Director position in DIT (FY07)*
- *establish Customer Services 'One Stop' for service requests end-user commodity items.*

The Role of the DCE

The Deputy County Executive (DCE) is responsible for the overall management of technology and information resources. The Board of Supervisors has broadened the role of the DCE since the position was created as CIO in FY 1995. The DCE is responsible for a broad range of information related departments. The Department of Information Technology, Fairfax County Library/Archives, the Department of Cable Communications and Consumer Protection, and the Health Insurance Portability Accountability Act (HIPAA) Compliance Office report directly to the DCE. The Office of Public Affairs information function works closely with the DCE to develop a comprehensive communications message strategy and to ensure the integrity of content for published information served through the County E-government programs. The DCE serves as the liaison to the Economic Development Authority in conveying the County's best technology best practices and assisting with marketing the County to prospective businesses. The DCE's broad responsibility for information spans policy, books, television, technology, health, consumer protection, the management of documents, and other information related functions.

To assist the DCE and CTO the Board of Supervisors in FY 1998 created a permanent private sector group called the Information Technology Policy Advisory Committee (ITPAC). The group is made up to 10 members appointed directly by the Board of Supervisors and five members that are recommended to the Board by the Federation of Civic Associations, School Board, Northern Virginia Technology Council, League of Women Voters and the Chamber of Commerce respectively. The ITPAC meets on a regular schedule to review the County's technology projects, plans and direction, and endorses the annual technology spending plan to the Board of Supervisors during budget review and deliberations. The ITPAC serves as advisors to the DCE, providing advice, experience and support for the IT program.

The Senior IT Steering Committee provides policy and resource oversight of the County's IT program. This group includes the County Executive, Deputy County Executives, Director of the Department of Information Technology/CTO, and Director of the Department of Management and Budget. The committee gets additional input 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 Supervisors' direction, and approves the annual IT investment plan which is delivered by the DCE and CTO to the ITPAC for its endorsement.

Project Investment Prioritization and Execution

The Senior IT Steering Committee establishes the funding priorities for technology projects. For FY 2004, based on global changes in social and economic paradigm shifts, the following priorities were adopted, and re-validated for FY 2006:

- 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 the County's departments as part of the annual budget process. County staff implemented a two-phase approach to assist in the preparation and evaluation of information technology project proposals submitted for FY2006 funding and to support the following objectives:

- *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 to 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 technology investments already made;*
- *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), 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 be used to measure success, estimated costs, business related risks and alternatives to the proposed project.

The technical analysis, reviewed by staff from the Department of Information Technology (DIT), includes such factors as proposed system architecture and its compatibility with the County's technical architecture standards, impact on existing systems, data conversion and electronic interface requirements, and staffing requirements for development, enhancement and maintenance of the project. After review by DMB and DIT, recommendations and suggestions for improvement are made to the project sponsors. The final project proposals are submitted, interviews are conducted and DIT and DMB senior management conduct final reviews and make funding recommendations for consideration by the Senior IT Steering Committee. This process is guided by the five information technology priorities established by the IT Senior 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 staff and ITPAC endorsement.

As stated previously, IT funding in the 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, but does benefit a single department or County function, funding may be placed into departmental budgets. The department can then use these funds to do the project internally with existing staff or contract for services if necessary. Agencies can request that DIT do the project if that is the best course. Departmental projects must still follow the established IT standards, methodology and architecture requirements and DIT is usually involved as an advisor at a minimum to ensure 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 manager is selected from the department sponsoring the project and a technical project manager is assigned from DIT and/or the user agency's technical group if one exists.
Project managers are required to hold regular meetings and report progress and issues. All projects need to follow the County's standards and project methodology as defined by the DCE in the 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. DIT has created a project manager certification course, which certifies project managers to lead projects at different dollar thresholds. Once certified and assigned to an approved project, the project manager's salary may be adjusted from his/her position of record to reflect the level of project responsibility and dollars that are involved. The certification focuses on project reporting and administration, contract negotiation and management, technical architecture, 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 PM is involved in the solution selection process to include contract negotiations. In addition to the Project Steering Committee, DIT may conduct periodic project reviews. DIT has established the Architectural Review Board to assist agencies in determining viability of solutions and fit with architectural standards and the county's infrastructure as a part of the solution competition and acquisition process. This includes members participating on Selection Advisory and Technical Advisory panels.

All of these elements...

- *Information DCE*
- *private sector and internal County board of directors for the DCE and CTO*
- *Executive IT Steering Committee*
- *planning and review of technology investments county-wide*
- *focus on standards, training and certification*
- *Project Steering Committees*
- *collaboration between agencies and DIT*
- *portfolio management*
- *Architectural Review Board*
- *skilled project management*

...work together to create an enterprise wide process and focus for IT in Fairfax County. The process is inclusive of all departments, it ensures that there is a high level champion for IT and that as solutions are chosen they match the goals of the enterprise as a whole.

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*
- *Systems 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 Strategic Planning team of staff across the IT organizational specialties to conduct activities to gather input on values, needs, and expectations related to the future provision of information technology solutions and services. The team was organized into external communications team, internal communications team, and IT research and development team. The result of the efforts of this initiative will compliment the annual process for development of the IT Plan and operations of the Department of Information Technology for a comprehensive enterprise-wide IT approach, offering a more strategic view of G2G, business integration for cross-cutting county initiatives, e-government opportunities and industry and economic trends; and, how these align with county priorities and resources. 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 forethought for the way the county invests in long-term commitments in technology to make sure that limited resources are appropriately allocated to achieve business objectives. This process is necessary for keeping and updating technology, measuring the appropriateness of the technology refresh cycles, and effectiveness and sustainability of the technology investments.

Keeping up with the pace of change in technology and using technology effectively to meet government business requirements and expectations are still the most critical challenges facing information technology providers. Advances in technology can enable the workforce to provide better and faster service at a reduced cost, but changes in technology can be 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 help plan for the future, a vision statement was adopted 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 opportunities to creatively enable and strengthen service delivery throughout 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.

Six major trends were identified in the past that affect potential technology solutions and enrichments to the County's current technology architecture, as well as ways to better enable the most optimum deployment in the face of resource limitations. In addition, one of the more recent trends related to interoperability have also been included:

1. *The workplace is becoming more mobile, so job functions can be performed without having to be tied to a physical location*
2. *Methods for communicating, collaborating and sharing information are becoming more 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 are requiring access to information in a variety of ways.*
7. *Interoperability requirements are driving a need for data standards and open information architecture.*

DIT's strategic initiatives are categorized within three strategic focus areas to ensure well-defined purpose for the accomplishment of our mission and vision. Essential components of each initiative were identified to facilitate the development of agency policies and processes as we seek to achieve our key objectives. The successful adaptation of these strategic initiatives will position DIT to provide an effective technology infrastructure and efficient customer service support. The overall outcome is promoting County agencies working together with partners, maximizing the resources of County agencies to provide diverse government services to our constituents and optimizing accessibility to our customers.

Collaborative initiatives were focused around governance structure and processes, technology rollout, interoperability framework, technology portfolio management and marketing. Customer Service Delivery initiatives were designed to improve customer service delivery and increase customer satisfaction and improve continually the quality, responsiveness and cohesiveness of products and services delivered. Our third set of initiatives, staff improvement initiatives, evolves around staff resource allocation and skills ownership and accountability. One of our major challenges is to develop comprehensive performance measurement systems. Working to overcome these challenges is a strategic priority as we recognize the importance of the effort. 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 over the next three to five years.

4.3 ARCHITECTURAL PLANNING AND EXECUTION

DIT is faced with the constant challenge of aligning the County's information technology strategy with the agencies' business requirements – then quickly realigning the technology infrastructure when the business requirements change. Fast changing business requirements can outstrip the capabilities of the IT infrastructure. Whether it takes an upgrade, an enhancement or a completely new system to meet the new business requirement, it is DIT's job to deliver the solution – on time and within budget.

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 so adverse to change. There is an industry-wide emphasis to shift toward a focus on developing operational agility. In that effort, the modern IT function has to lower the cost of future changes while managing the total cost of ownership for each solution.

IT Architectural Planning shows how to break out of this loop by creating 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 investments, and sets a clear direction for the future acquisition and deployment 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 will meet business requirements and address business issues.

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

- Better aligning IT assets with business goals and creating 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 database, hardware and application software redundancy, thereby providing the potential to reduce the cost of IT
- Promoting data sharing between agencies and across IT platforms; improving interoperability and the potential for agency resource sharing

In FY 2001, a Strategic Architecture Committee composed of DIT and technical and/or business representatives of county departments was formalized. Committee members selected had 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. The Committee also works with County departments to ensure that there is participation and inclusion in decisions that affect the annual IT planning process. Responsibilities of the Committee include:

- Providing information technology architectural leadership to Fairfax County Government in supporting the on-going development of a strong, flexible, interoperable and secure technology environment.
- Ensuring that there is an integrated view between the County's architectural direction and technology initiatives and implementation plans.
- Working closely with DIT and other County IT groups to identify IT architectural issues related to business needs and IT projects, and proposing approaches to address them.
- Proposing IT architectural plans and standards to DIT, the DCE and the Senior IT Steering Committee for Countywide implementation.

During the latter part of FY 2002, 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 Team include application development architecture, infrastructure and information architectures, security architecture, emerging technology, process and data modeling, integration, standards and policy enforcement, and SDLCS compliance. This is extremely important and valuable given that the technology pendulum is again swinging towards development and enterprise application integration as a vital function as new technologies and platforms are incorporated into the overall architecture framework.

4.4 SYSTEMS DEVELOPMENT LIFE CYCLE STANDARDS (SDLCS)

The Need for SDLC Standards

In 1987, the County published Documentation Standards. These were guidelines for documenting the development and implementation of mainframe applications. The original standards included written means of conveying to mainframe operations staff information about the planned application, to allow those staff to plan capacity and other resources required to place the application into production.

The Documentation Standards stood the test of time. However, the technology used by DIT in developing applications has changed dramatically, as has the technology on which applications are running. As the original standards were applicable to a declining number of new applications, a major overhaul of these standards was initiated in 1998. The effort concentrated on combining much of the original content that applied to legacy, mainframe based applications, with new application development techniques and application architectures using the newer and emerging technologies. These standards were enhanced in 2004 and 2005 to include updates and additional components. Additional enhancements and updates are planned for FY 2007.

Purpose of the Systems Development Life Cycle Standards (SDLCS)

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 as to what are the important procedures necessary to complete an application.

The purpose of Systems SDLCS is to provide a guide to documentation for all development and enhancement projects and a checklist to assist in ensuring projects are complete. These Standards apply to all applications developed for use by Fairfax County Government. These include, but are not limited to, mainframe-based applications, client server; WEB/Internet based applications, wireless technologies, data architectures and enterprise taxonomy. All staff and contractors developing and maintaining applications for County Government must comply with the Standards. In order to assist non-technical staff in using them, a glossary is included on the Web site.

Another value implicit in the SDLCS is the importance of using the expertise of the project manager to select the appropriate outputs. While a minimum number of document deliverables are mandatory, the manager must select others appropriate to the individual project. A third value is that of 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 to learn how the application development standards can be improved. Periodically, selected IT projects are reviewed internally by DIT business and technical staff. In addition, the Fairfax County Internal Auditors will review randomly selected projects.

Description of the Standards

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. In the Design phase, for example, the step Design Technical Architecture has five outputs, two of which are: Check list for Technical Architecture Installation and Network Infrastructure Plan. The description of each deliverable document includes its purpose, content, recommended techniques and tools, and, where appropriate, a template or sample.

The first step in following the Systems Development Life Cycle Standards is for the project managers, both technical project manager and user project manager, to complete a check list selecting which outputs are relevant to their project. A core set of outputs is being made mandatory for the different types of development. For example, for Web development, project managers must complete the following:

- Project management plan [Outputs 1.2.1, 2.6.1]
- Statement of scope [Outputs 1.2.2]
- User requirements [Outputs 2.7.1]
- A data model (if there is a database) {Outputs 2.3.1, 3.2.1]
- A process model [Outputs 2.1.1, 2.2.1, 3.1.1]
- And a test plan [Outputs 5.1.1]

The project manager and Division Director approve the completed outputs. In addition to the eight phases described above, the Web site contains the Checklist and a Glossary of terms used in the Standards, and an Introduction. The Glossary facilitates the use of the Standards by the user staff involved in application development. The Introduction covers how to access and use this document. It includes: the purpose of the standards, what they are to be used for and how to use them, a suggested sequence for completion, recommended input documents and a sample of available commercial tools. The Introduction also contains a checklist of all the outputs from which project managers will select those relevant to their project. Because of the variation of size, type and platforms of applications, the DIT and user agencies' Project Managers start the development of the application by selecting outputs applicable to that particular project. The selections are scrutinized and approved by both DIT and user agencies' management.

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

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 as to what are the important procedures necessary to complete an application. Using SDLCS as a starting point, the Architecture and Planning team is leading the effort to re-formulate a methodology as to not only what procedures should be followed, but also how they should be executed. The methodology will expand upon this. Each year, staff will go through a process of review and refinements to the SDLCS as necessitated by changes in technologies. Ensuring the quality of applications is to have consistent and all encompassing standards that apply to all phases of application development. The Architecture and Planning team integrates the application development process standards, and the technology architectural standards that affect the development of systems. This includes identification of which standards need to be updated and where new standards need to be developed.

4.5 IT PROJECT MANAGEMENT PROGRAM

Managing an information technology project to successful completion, on time and within budget, is extremely challenging, even for experienced IT professionals. Successful completion of such a project is dependent upon project managers possessing not only knowledge and understanding of the highly technical aspects of an information technology project but also the skills associated with managing projects in a dynamic environment. The importance of effective management of information technology projects in the County has long been recognized as critical to delivering a high quality product. An IT Project Management position series is included within the County's personnel classification system.

During the late 1980's and early 1990's the County's internal auditor's office conducted several audits of 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 Acting 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 program and course was designed and implemented.

In 2001, the County's IT Project Management (ITPM) program was redesigned to include the project management core competencies included in the Project Management Institute's (PMI) body of knowledge. PMI is the professional credentialing organization for project management professionals. Fairfax County's new ITPM program has incorporated current industry approved ITPM practices to ensure sound high quality project outcomes. Additional enhancements are made each year as technology and best practices evolve. Additional focus has been placed on managing risks, IT security and measurement.

The new and improved training program consists of eighty eight (88) hours (11days) delivered over the course of 8 weeks by County staff and a project management professional. The overall objective of the IT Project Management course is to provide IT project managers with a foundation in basic project

management concepts, principles, and practices to effectively and efficiently manage IT projects.

The core content areas covered are:

- IT Project Management Fundamentals
- 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 Reporting
- Project Resource Leadership
- Information Systems Audit, Control and Security
- 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 (200) County of Fairfax and local government IT professionals have completed the program and met certification requirements.

The Fairfax County IT Project Management Certification is awarded to participants in recognition of full participation in the ITPM course. The County's certification is customized for its IT Project Management operations. Certification is based upon class participation and achievement of the course objectives. The project manager acquires a clearly defined set of core competencies related to ITPM by attending all IT project management classes in their entirety. This includes the successful completion of a hands-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 direct responsibility and authority for all phases of the project management process from initiation to closure. Support for applying project management methodology is available to new project managers who may benefit from mentoring.

Project management success is the completion of IT projects that are delivered to customers in the allocated time period, within the budgeted cost, and at the user's specified performance level. The use of effective project management skills is critical to the successful completion of IT projects. The County's IT Project Management training program provides the methodology for achieving high quality IT results utilizing County and contracted resources effectively and efficiently. Working with DIT, graduates of the IT Project Management Certification program have established a Project Management Forum to share information about on-going projects, experiences and ideas, and to refresh knowledge and assist making improvements to the Certification curriculum.

In FY 2006, DIT began developing and delivering a new series of one-day seminars to Fairfax County Project Management personnel. The ITPM Seminar Series, also known as the ITPM "refresher", provides the opportunity to offer follow-up training for those IT project managers that took the classes prior to 2001 and others as needed. The goals of this initiative are to hone existing project management skills, increase the likelihood that County projects will be completed within allotted time and cost constraints and improve each project manager's ability to identify and mitigate project risks.

This series of independent, interactive seminars, allows 25 students per day to learn about and practice current project management techniques. Also, the brevity of each seminar allows the County to train a larger group of personnel by scheduling more than one seminar session per topic as demand may warrant; to offer seminars more than once during the fiscal year; and to allow project managers the opportunity to "refresh" themselves in specific topic areas as needed. In FY 2007, DIT plans to develop a full curriculum of Seminar Series classes.

The first Seminar Series topic areas delivered were IT Project Integration and IT Project Communications. It is critical that IT project managers have tools available to move quickly to establish project guidelines, create initial project documents, and organize themselves and the project team for success. Because communication happens naturally between most project stakeholders, many Project Managers do not consider formal communications planning in developing an overall project plan. A hypothetical case study project is included as part of the new Seminar Series.

Program enhancements are planned for FY 2007 to provide new tools and techniques for managing projects that have enterprise-level impact, influence or reliance. The County's increased focus on providing training and certification in the application of project

management techniques to information technology projects is a critical and proactive effort directed at ensuring successful application of information technology to assist the County in meeting the needs of its citizens in the 21st Century and beyond.

4.6 HIPAA COMPLIANCE PROGRAM EXECUTION

The HIPAA Compliance Program is supported by a HIPAA Compliance Manager under the direct supervision of the DCE. The strategy of the HIPAA Compliance Program is to thoroughly assess all County government business practices related to the direct provision of health care, the management of health related records, and the continuity of care provided to residents and employees to ensure HIPAA compliance.

The HIPAA Compliance program is executed within the County based upon a matrix management model of cross-functional work teams. The primary policy setting committee of Core team members represent all agencies affected by HIPAA. This committee meets regularly to coordinate on-going compliance. Additional cross-functional teams are established to address training issues and procedure development.

Technical compliance initiatives required to support automated process in agencies that are covered under HIPAA are developed in collaboration with the Department of Information Technology. The IT Security Officer, as well as IT managers in communications technologies and applications support, develop and execute the IT compliance requirements. Some agencies may submit projects that enhance service efficiencies but must have special HIPAA compliant infrastructures developed. The on-going investments in infrastructure refresh and new systems will be implemented HIPAA compliant.

INFORMATION TECHNOLOGY ARCHITECTURE

FEATURED IN THIS SECTION

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SECTION 5
INFORMATION TECHNOLOGY ARCHITECTURE

5.1 ENTERPRISE ARCHITECTURE

This section of the Plan identifies the 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 implementing new technologies in response to the changing needs of government business. It is a multi-layered architecture that includes IT architecture segments including:

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

5.2 IT ARCHITECTURE PROCESS MODEL

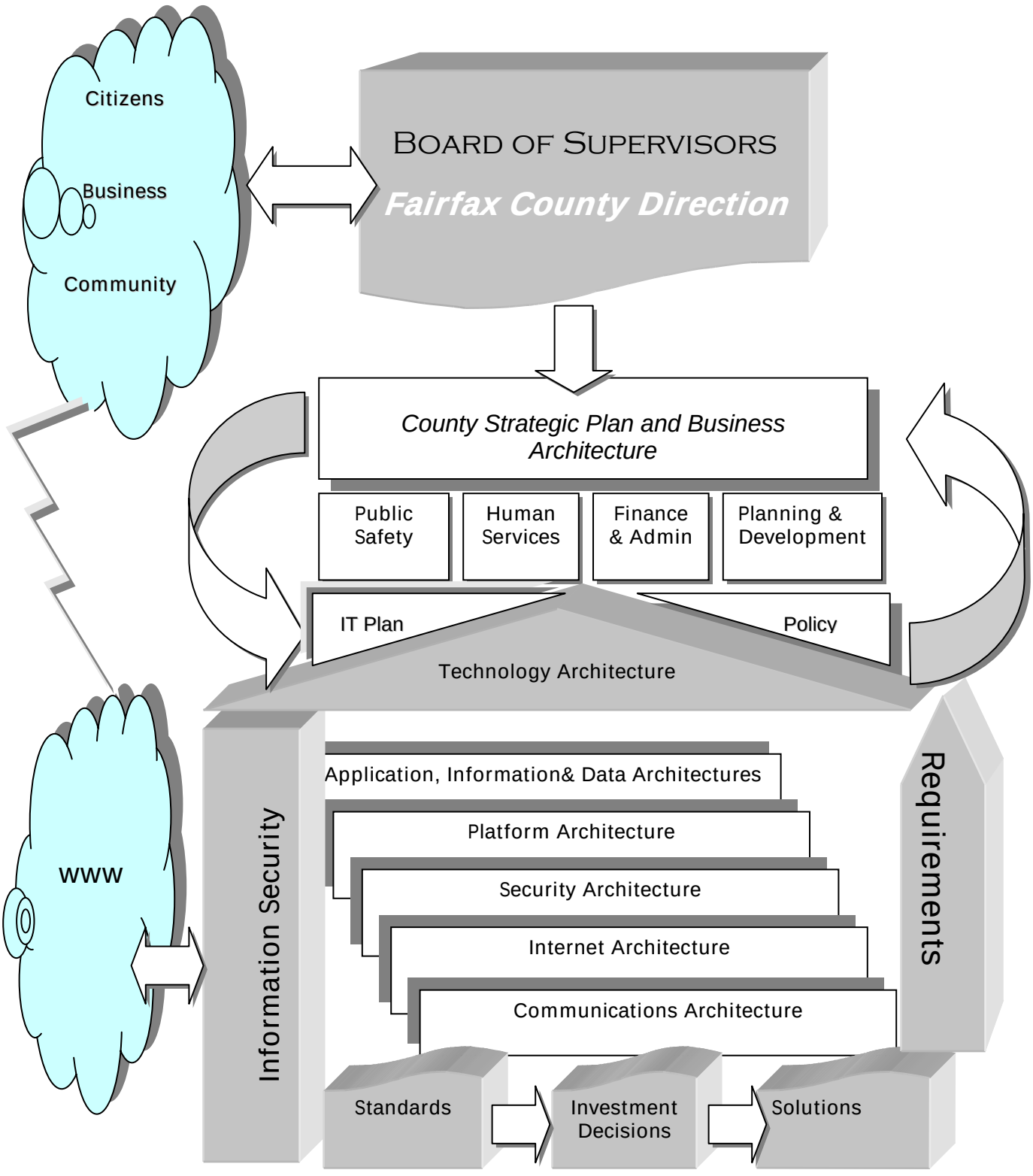
Enterprise Architecture (EA) is the blueprint or roadmap by which specific technology solutions are created. Architecture defines how technology is used to enable business solutions. It also must be flexible enough to allow expansion and change as requirements evolve or technology becomes obsolete or is updated. Architecture as a foundation and roadmap, also allows the county to understand how new requirements and technology changes will affect it and allows new technology opportunities to be captured as part of an updated blueprint to benefit others. EA improves the efficiency and effectiveness of technology investments by reducing redundancy 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 and business architectures, and the iterative processes involved to ensure the development of an IT architecture that is efficient, cost-effective and business driven. For the purposes of the County's model, the business processes have been grouped into four major functional areas; Human Services (HS), Public Safety (PS), Planning and Development (PD), and Finance & Revenue (F&R), which reflect the compartmentalization of County services for delivery as well as evaluation purposes.
The model is based on the mission statement for Information Technology, specifically:

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

This mission is what directs the County's information technology activities. Every effort undertaken is framed against this mission statement.

Enterprise IT Architecture Process Model



5.3 APPLICATION & DATA ARCHITECTURE

The application architecture defines how applications are designed and how they cooperate. The architecture promotes common development and presentation standards and enables a high level of system integration, and storage and retrieval of data. It should facilitate the reuse of components and rapid deployment of applications in response to changing business requirements. This layer includes elements of the technology architecture that convert business process to business intelligence, the overall goal being to ensure that County services are executed in a timely, efficient and cost-effective manner. The County has a vast inventory of enterprise-wide and agency specific production applications residing on mainframe, mid-size computer and microcomputer platforms. New applications and application enhancements are constantly being evaluated, developed, acquired, and implemented as older "legacy" applications are retired.

The County's goal for this layer is to use and create industry standard application development tools and language environments that are adaptive in client/server and Web-enabled models. Further, this should allow the County to protect its investment in 'classic' systems by providing enhancements that facilitate greater user-friendliness, better data manipulation and reporting, and end user controls. In addition, by keeping abreast of emerging technologies such as Web Services, XML, and so forth, the County is positioning itself to take advantage of the opportunities these technologies offer. 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 moves toward finding a balance between COTS vs. in-house development, a new framework for development activity is being put in place. First and foremost, this new framework will incorporate the concepts of Software Engineering, Information Architecture, and Application Development Methodology. These principles and techniques will be used to augment the current Systems Development Life Cycle Standards (SDLCS). This approach will encompass application life cycles from "cradle to grave"; that is, from the earliest stages of planning, through requirements and design, to implementation and post-implementation support. These new applications will be built on the most current and promising platforms and an architectural framework based on the future of IT, not on the past. While existing legacy systems will continue to be supported, a dramatic move is also underway to embrace new development platforms such as .Net and emerging standards such as XML and Web Services.

The .Net platform will provide the foundation for the next generation of both departmental and enterprise-wide applications. .Net provides 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 will provide County developers with a robust and flexible development environment. Encapsulating both existing and new business logic into "Web services" will provide the ability to expose business processes across organizational and application boundaries, not only within the County, but with other jurisdictions, the state, and the federal government, as well as with business partners. XML will provide the common "glue" to hold together and provide consistent information across these boundaries to facilitate the need to share data from disparate platforms and systems. Enterprise Application Integration (EAI) products such as WebMethods will allow a virtually unlimited ability to share, and bring into this new environment, information and business process from older, mainframe and client/server applications. With the ability to extend these business processes even more through the use of ASP code, the result will be a product that is greater than the sum of the parts.

A detailed "Architectural Framework" document has been developed. The framework is intended to be an organic document which will be flexible enough to reflect and incorporate the rapid advances in information technology.

Office Systems - Fairfax County uses the MS Office Suite installed on PCs attached to LAN-based servers and printers to facilitate shared file and printing requirements for word processing, spreadsheet, groupware presentation software, workflow database applications, project management and collaborative group work process and workflow. E-mail is MS Outlook on the desktop supported by Microsoft Exchange on a Unisys enterprise server.

Production Applications - Fairfax County is in the midst of overhauling and updating many of its administrative applications as well as acquiring new

applications. Key applications in the midst of development or further enhancement include the County's land development systems, tax systems, public safety systems, various human services systems, and human resources management systems. DIT maintains approximately 65 mainframe-based classic applications for Fairfax County agencies that support finance, purchasing, personnel, public safety, and planning and development of business operations. Most of these applications are modified package software, that run under CICS, using programming language architectures such as COBOL, SAS and EASYTRIEVE PLUS, with DB2, IDMS and VSAM databases. Efforts are underway to convert IDMS based applications to new technology. The current mainframe ('enterprise server') is an IBM 9672 with 1.5 Terabytes of storage, running z/OS. Access to the mainframe systems is provided via the county's LAN by mainframe terminal emulation software on the desktop. The mainframe systems utilize text–based screens with user knowledge required of the application commands and function keys.

DIT has deployed Web-enabled GUI front-end versions of several mainframe applications to facilitate easier access to system data. In addition, the classic COTS financial suite has been enhanced through the use WebMethods, the county's middleware EIA software tool which ties the two COTS together. The change created an integrated process for entering financial transactions through a modern, user friendly Windows interface. There are several projects underway to use EIA and Web-enable other corporate systems to build in web services, work flow and desktop reporting capabilities, meeting end user demands for GUI access to County business data. DIT also provides first tier support for over 100 server-based applications for agencies that provide Windows GUI access to a server resident database. Most of the server applications are "fat client" in nature with ORACLE as the primary database residing on UNIX and/or Windows servers. Some of these are being upgraded to web-browser based applications.

There are also "fat client" and web server-based agency specific applications that are maintained separately by agency IT staff. The large majority of the small agency applications use Microsoft Access or Microsoft SQL Server as their database and programming language architecture. The IT standards call for complex, Internet accessible or high access databases to use Microsoft SQL Server, Oracle or DB2 as appropriate. Most agency server-based systems reside on Windows 2000 servers that support both applications and file and print server-sharing requirements. In FY 2005, the operating environment will migrate to Windows 2003.

Geographical Information System Applications (GIS) - GIS is a specialized system for storing, retrieving and analyzing an array of digitized map layers that collectively record the topographic, demographic and other features of every location in the County. GIS can be used to identify the shortest route from one location to another, generate school bus and sanitation truck routes, locate sewer lines and other utilities, plan development and many other useful tasks. Our system currently has over 200 layers of GIS data. The County is continuing to develop its GIS data and implement new applications in support of agency functions. GIS is supported on the UNIX platform.

5.3.1 The Application Tools

Application tools are the information technology components used to develop and support the functioning of the applications. Application tools also include the support systems used to facilitate work planning and communications.

Programming/Development Tools - New applications are currently being developed using fourth generation object oriented languages and tools. This approach will continue as additional client/server applications are developed and as Commercial-Off-The-Shelf (COTS) system components are purchased. Standard life-cycle methodologies are employed to define, develop and implement new systems. The models and design documents that are created are updated throughout the system development and maintenance life cycle. In specific instances, expert system technology has been used to incorporate complex rule based functionality into systems. Third and fourth generation languages and tools are used in only a few specific development efforts and as utility programs on the mainframe tier of some client/server systems. New developments are using ASP and ASP.NET and *Dreamweaver* for the presentation layer. The County uses webMethods, a suite of tools 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. The county also supports REAMS imaging solution.
Software Engineering technologies are being incorporated into the Systems Development Life Cycle Standards (SDLCS) to provide a disciplined and consistent development approach.

Database Management Systems (DBMS) – The County uses several database management systems to support its business applications. Mainframe classic and legacy applications use DB2, IDMS, and/or VSAM databases. DB2 is the preferred database solution for new mainframe hosted applications. For UNIX or Windows platforms, Oracle and Microsoft SQL Server are the County's database standards. Oracle Gateway, Neon's Shadow Direct, and webMethods are used to enable access of mainframe DB2 databases. Relational database design activities, such as creating entity-relationship diagrams, the data dictionary, the process models, the logical and physical data models, and the database definition language, are supported through the COOL: BIZ and ER/WIN tools.

Departmental Reporting – Crystal Reports, QMF, SAS, and Easytrieve Plus are the current tools supported for basic ad-hoc query and departmental reporting.

Enterprise Decision Support Systems and Business Intelligence - The County's portfolio currently contains over 20 different products used for reporting, analytics, and decision support. Many of these products were brought into the environment through purchase of a COTS solution having embedded tools. As a result, the County's business intelligence capability is built on department-class rather than enterprise-class technology. The proliferation of tools and the associated support, training, and infrastructure costs present a strong business case for rationalizing the portfolio. The County's strategy in this regard is to provide shared enterprise capability and infrastructure for decision support. To that end, the County is currently assessing a variety of platform solutions including SAS, Business Objects, and others that could facilitate the consolidation of isolated point solutions. 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 upgrade and modernize the existing portfolio while creating economies of scale for improved support and cost control.

Office Automation/Workstation Software - The County office automation tools are the Microsoft Office Suite including Word for word processing, Excel for spreadsheets, PowerPoint for presentations, Access for desktop application databases, Exchange/ Outlook for e-mail/groupware, and Internet Explorer for Web browsing. Other desktop software includes Microsoft Project for project management/tracking, VISIO, and Symantec Antivirus. Agencies may have other desktop based software for special requirements.

GroupWare/Collaborative Software - The County uses Group Systems as its primary collaborative group 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. Other software is used to support activities dealing with the group output/results, e.g., Microsoft Exchange, Word, Excel, databases, presentation and process modeling software.

GIS Software - The ARC/INFO software provides high-end workstation tools and functionality to the GIS analyst. The software integrates visual or graphic data in the form of maps, with descriptive or attribute information from an organization's internal databases. ARC/INFO provides the tools for analysts to access, visualize, and query both graphic and tabular data for better analysis and decision-making. Additionally, ArcView GIS provides mid-range desktop GIS tools to the skilled-user for map creation and analysis of the County's geographic data sets. And finally, MapObjects and the Internet Map Server provide a method for distributing highly customized GIS based applications through the Internet /Intranet.

Technical Support Center-Help Desk Software - The Technical Support Center provides County employees a centralized point of contact for computer support. Using the Automatic Call Distribution telephone system to route calls and diagnostic tools such as ServiceWare Knowledge Paks, Microsoft Technet and technical documentation, the Technical Support Center has a high percentage rate of first call resolution. The client/server application Quintus CustomerQ, WebQ, the Intranet counterpart, and the Oracle database are accessed through the County's Enterprise System.

5.4 PLATFORM ARCHITECTURE

The platform architecture defines the technical components of the infrastructure including client and server platforms, the operating systems and interfaces supported, and equipment used to operate the applications and application tools. Fairfax County's platform architecture includes over 300 servers: z/OS mainframe, UNIX (IBM AIX and Sun Solaris), and Microsoft Windows 2000/2003. Over 10,000 PC's provide end-user access to County systems. Laptops, Palm Pilots, Blackberries and other PDAs and hand-held devices also support employee access to Agency business systems.

All Personal Computers use Windows 2003 and the Microsoft Office Suite to support office automation requirements. Total server storage requirements have grown from 394 gigabytes in 1998 to the current total of 22 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.

5.4.1 The Platforms

Desktop PCs, Workstations and Peripherals - Increased use of microcomputer technology by all Fairfax County agencies has facilitated the streamlining of operations and improved the delivery of services to citizens. DIT prescribes hardware platforms and desktop applications standards and procurement vehicles as a means of controlling costs. Standard desktop configurations allow for consolidated procurement and enhance the County's ability to provide technical support to all users. Desktop microcomputers (PCs) are replaced in accordance with the County's four-year PC Replacement Program cycle using the standards that are available and adopted at the time. All County microcomputers and associated peripherals are centrally procured to achieve economies of scale, consistent hardware platforms throughout all agencies creating a more effective support environment.

The current microcomputer platform standard consists of mostly Pentium based hardware running the Microsoft Windows 2003 operating system. County microcomputers are used for office productivity software, enterprise e-mail and groupware, application client software, Internet/Web access, and mainframe emulation. Office configuration standards are depicted in the diagram on the next page followed by a table listing all County IT Standards for desktops and servers. The next wave of PC replacements to be deployed during FY 2007 will be Windows 2003. This will be approximately one-third of the installed base. We will be evaluating Vista and MS Mobile Web for the next deployment enhancement.

Desktop and network printing is accomplished through a large inventory of stand-alone and network printers. Mainframe output is generated on two variable speed impact printers that support 2,000 to 4,000 lines per minute, and two advanced function printers that operate at speeds of up to 310 pages per minute. Agencies use a variety of laser-jet type desktop and high speed LAN based printers in offices. In 2003, the county's copier inventory became an enterprise multi-function copier/printer/scan/fax machine asset. In FY 2005, this program was moved to the Department of Information Technology and incorporated into an enterprise printing solution strategy.

LAN-based Network Servers - Fairfax County has completed the migration to its new LAN directory services standard, Active Directory, which is an essential component of the Microsoft Windows 2000 architecture. However, the County still supports Microsoft Windows NT Server for required applications. In addition to the current NT and Windows 2000 servers the County also supports UNIX servers that are used for those large agency specific applications that require a more robust server platform. SUN is the preferred UNIX server; however, the IBM p-Series is still supported.

CITRIX Meta Frame Servers are used for many of the business applications that require "thin-client" technology to minimize Wide Area Network traffic, optimize the efficiency of fat client-server applications, and streamline desktop PC support activities. CITRIX also support secure access for remote access users and telework.

Details on managed LAN-based servers:

Device	***Machine***
Mainframe Computer	IBM zSeries, Z890 Model 240 8GB Real Storage
Tape Subsystem	IBM 3494 Automated Tape Library IBM 3590E Drives IBM 3480 (cartridge)
Printers	IBM 4100 Laser IBM 3900 Laser IBM 6400 Line Matrix

Mainframe (Enterprise Server) - Fairfax County supports its major business and legacy applications on an IBM mainframe running the z/OS operating system. It is partitioned into logical machines, serving over 20,000 agency and schools users at over 200 locations.

Mid range Platform	***Number of Servers***
AIX	12
W2K/W3K	320
Solaris	25
Unisys	1 (x 24)

5.4.2 Storage Area Network

In FY 02 Fairfax County began its first implementation of the Storage Area Network (SAN) infrastructure. The initial purchase was eight Terabytes of Hitachi Data System (HDS) storage. Since that time, the HDS has been expanded to 34 Terabytes. During FY 05, the County added EMC storage to the existing SAN infrastructure to meet the strategic initiatives for Data Life Cycle Management. Platforms connected to the SAN include the mainframe server, Windows servers, and AIX and Solaris servers. The primary SAN benefit is enabling server access to a centralized pool of storage, thus providing administrators with greater flexibility in realigning storage capacity to the servers that need it.
Storage Management requirements addressed by the SAN are:

- Scaleable storage capacity that can allow users to increase their storage as needed.
- Modular, adaptive architectures that allow users to deploy storage in a variety of centralized and distributed environments with re-deployment capabilities when 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 amounts of data that are being put online.
- 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."
- Management tools that are easy to use and centralized while allowing the hardware and data to be "distributed."

Storage Area Network Details:

Device	***Machine***
Disk Subsystem- Intel & Unix	Hitachi 9960 EMC CX500 InLine S30H, TF480
MS Exchange environment	EMC CX700
Tape Subsystem	IBM 3494 Automated Tape Library IBM 3590E Drives Spectra Logic 64K Tape Library SpectaLogic 20K

5.5 NETWORK ARCHITECTURE

The County's communications infrastructure includes voice and data technologies and the 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 County's voice and data networks continue to grow, in terms of cost, sophistication, and increased demand on our communication staff.

The Communication Group in DIT supports over 12,500 data ports and over 15,000 voice ports. Additionally, initiatives already in place and those planned have resulted in many significant changes with many more occurring in the future. The Gartner Research Group and others now document that network technologies refresh every 18-24 months. This will provide more challenges for County fiscal and staff resources, as the County strives to keep network standards in line with evolving business requirements, security and other support needs. The communications plan strives to take into account growth, based on the needs of County agencies as programs expand, which in turn require new or expanded network resources to provide both intra and inter County links. The Internet and Web-enabled applications have rapidly expanded. This expansion and the need for business continuity required the expansion from a single high capacity DS3 to two full 45 Mbps circuits connected to two separate ISPs. Future initiatives and technologies, such as 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 requirement to update and/or enhance annually. During FY 2004 the County replaced its Wide Area Frame Relay network with a new ATM logically meshed network. The desire for increased network security has resulted in the County employing Network Address Translation (NAT) to add another security layer to protect its Enterprise Network.

The goal is to provide a network that is responsive and reliable for the user and the user's application and will allow for the uninterrupted flow of voice, data, and video information. To this end, the County is working on several projects that will boost and consolidate the underlying physical infrastructure supporting voice, data, and video, while at the same time providing increased, cost-effective bandwidth potential, and improved output. The best opportunity recognized is through the implementation of the I-NET, a metropolitan fiber ring that will connect over 400 County and Schools facilities. The County views a strong, viable communications infrastructure as a vital component in the overall IT strategy toward maintaining its success in deploying cost-effective solutions that optimizes its business goals, and maintains its reputation as a leader in technology.

5.5.1 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. Operated by the Department of Information Technology Infrastructure Division, the Enterprise Data Network connects approximately 12,500 computer devices in over 300 locations. These computer devices include personal computers, printers, network servers, communications equipment (routers and switches), modems, UNIX workstations and servers, mini-computers, and the mainframe computer. Additionally, various wireless technologies are rapidly expanding throughout the County's network. In FY 2007, the county will begin a project that builds a private broadband wireless infrastructure that will support wide-bandwidth applications, data, images, and live video to the field and mobile devices supporting primarily Public Safety responders and evolving for other key business areas.

All supported network systems are based upon open standards, and compliance with published standards is required for any network-connected device or system. Therefore, although the Enterprise Network supports equipment and systems from multiple vendors, the County has implemented a pure TCP/IP network protocol. Gigabit Ethernet is used as the backbone at both the Government Center and Public Safety campuses. Each of the two Campuses are connected via an OC12 and the standard desktop connection is switched 100 MB.

The Enterprise Wide Area Network (WAN) Architecture for Fairfax County is ATM. The WAN backbone consists of two OC-12 (622 MBPS) circuits into the Government Center and Public Safety campuses providing redundant fully meshed trunks for the remote sites. At the remote sites there is a mixture of ATM OC-3s, DS3s and full T1 service, with no site having less than full T-1 capacity. This WAN architecture provides redundancy to all remote sites including the Public Safety Campus and has a highly sophisticated perimeter and internal security implementations to protect the County's electronic information. This new network design, including a renumbering scheme, security implementations and equipment, will permit the overlay of the network onto the new I-Net as that topology is implemented.

The County also utilizes both ISDN and DSL technologies for small sites such as Group Homes and Park Maintenance shops. The decision to use these technologies is based on staff size and data requirements of the staff. Currently, the County maintains 33 ISDN sites and 12 DSL sites.

An addition to the Enterprise Wide Area Network (WAN) Architecture during FY 05 was the creation of a Public Access Network. The purpose of this network is to provide public access computers to the Citizens of Fairfax County allowing them access to County and Internet resources while protecting the Fairfax County Enterprise Network. This network includes all Public Libraries and Community and Recreation 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 continue to be followed at any new facilities requiring both enterprise and public access.

Network Management is currently supported on four platforms:

1. IBM Netview for MVS – Monitors mainframe and network resources,
2. CISCO Works 2000 – Monitors all Cisco installed equipment.
3. Orion Solarwinds -- used to track performance issues.
4. Verizon Managed Services – provides fault reporting of all ATM sites.

Currently, mainframe connectivity is achieved through two primary gateways. The first, a Cisco router using CIP (Channel Interface Processor), connects directly to the IBM Mainframe through a fiber-optic channel and supports a majority of the TN3270 (Telnet) sessions to the mainframe; the second, an IBM 3745 Front End Processor is used to support the legacy SNA network sessions. The 3745 is being replaced during FY 2006 by moving this type connectivity directly onto the new Mainframe over native Ethernet, a capability not previously available.

The County has implemented a 'SAFE' architecture dividing our perimeter into four business groups E-Commerce, Internet Access, Partners, and Public Access. Each group has its own physical firewall tailored for that specific business area. The E-Commerce business group supports all public facing web services providing access to County resources for

both Citizens and Businesses. 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, Department of Juvenile Justice, and State Board of Elections) as will as connections for several adjoining jurisdictions for public safety. By doing so the County has increased Firewall performance and limited exposure to each business group.

During the next two years, the County will light the dark fiber (I-Net) by Cox Communications through the Cable Franchise Agreement to support data, voice and video communication to County and School facilities. Remote access via dial-up, 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. During FY 2005 the County will continue to implement wireless LANs and wireless data over cellular systems, when this technology makes good business sense. The County carefully evaluates the use of this technology to ensure all County data is protected from unauthorized access. As Voice Over Internet Protocol (VOIP) solutions become more mainstream, the County will start prototyping these solutions in those locations to which it makes both business and fiscal sense.

5.5.2 Voice Communications Network

The County's Voice Communications Network provides voice communications services to all Fairfax County Government agencies, as well as various affiliates via County-owned PBX's, Centrex's, and key systems which are located in buildings throughout the County and connected via Telephone Company lines and several direct County-owned lines for campus locations. The services range from small to large call centers, IVR (Interactive Voice Response) systems, complicated voice services, and residential services for County-operated group homes and apartments. Management and voice communication support are also provided for the primary and backup (alternate) 911 communications centers.

Although the convergence of voice, data and video traffic into a single network is the ultimate goal for the County's communication architecture, the County currently uses a mix of digital, analog and hybrid PBXs, digital electronic key systems, analog 1A2 Key equipment, Verizon provided Centrex, and single-line (POTS) equipment to meet its voice communication requirements. There are approximately 400 manned County locations, comprised of two major campus environments, several large Human Services centers, Parks, Libraries, Police, Fire and Rescue stations, "911" Centers, Public Health Centers, etc. Additionally, the County has links to over 300 unmanned water, sewage and HVAC systems, as well as links to various agencies of the Commonwealth of Virginia and other local jurisdictions. The county developed a strategic plan for replacing these disparate systems with an enterprise-wide voice communications solution. Implementation of the new voice solution will begin In FY 2006. The solution will use the latest technology that includes VOIP and will use the I-Net (fiber-optic network) as the backbone network that connects county facilities and lower the County's circuit costs.

DIT supports over 15,000 phones, which use a combination of Siemens/Rolm, Toshiba, Avaya, Mitel and Norstar systems, During an average month the County places over 1.3 million calls excluding intra-building calls. Below is a brief, but by no means complete, summary of the County's voice communications infrastructure.

- The main government centers and large buildings are serviced by Siemens PBXs and Nortel Meridian Option 61C PBX systems; all having integrated voicemail systems.
- Fairfax County's main Government Center's voice traffic is served with a four-node leagcy Siemens 9751-70 and the County's Public Safety Center located at the Massey campus with a two-node Siemens 9751-70. These systems, as well as several other large building systems are interconnected via DS1 tie lines, which reduce some of the message unit charges from Verizon.

- An IP-enabled Nortel PBX is located at the South County Government Center and supports an office two miles away via a remote shelf. About 10% of the telephones are IP sets.

- A Nortel PBX is located at the PSCC (Public Safety Communications Center) for emergency calls, while administrative calls at this location are processed by a Nortel Succession 1000 PBX, which replaced the aging System 75 PBX.

- Voice communications to our smaller remote sites, including Libraries, Parks, Public Health Centers, etc., are served by various Toshiba systems and Siemens "Redwood" systems, all with integrated voicemail. The County also has one recently upgraded Mitel SX-200.

- A Nortel Networks Succession 1000M has been installed at the Health Department's Kelly Square location. This IP enabled PBX not only gave the department advanced capabilities, but it also took a significant resource load off the Massey PBX.

- Police and Fire and Rescue stations are all being upgraded to Nortel BCMs and are networked to a Succession 1000M configured as a Network Gateway Controller. This will allow Public Health and Public Safety personnel, located in different buildings across the County, to be integrated into a contiguous "First Responders" telephone network.

- A ninety-six (96) port computerized conference bridge is located at the PSCC for predominately Police and Fire and Rescue operations. This conference bridge is provided by Octave, and is expandable to 192 ports.

- Voice needs of our very small offices, i.e., small Human Services and community services sites are supported by POTS service and single-line analog sets.

- Various agencies also use centralized IVR services with connectivity provided via Verizon T-1 and numerous channel banks at distant sites. These services have greatly improved Fairfax County government's ability to provide quality services to its citizens and business clientele.

- The County's antiquated VDS hardware and software used to capture ACD historical statistics has been replaced with new hardware and a new application which provides Call Center statistics and metrics. Although not a final solution this application will greatly improve the necessary statistics used by our Call Center managers to evaluate the County's response to County citizens.

- The County's 12-year old ATMS (Automated Telephone Management System has been replaced by a new ACECOM NetPlus management system which will significantly improve the management of the County's telephony systems and dramatically improve our inventory, work order, and billing processes.

A framework for a strategic direction to evolve the Counties communications capabilities and services was developed during a FY 2002 comprehensive study of the telecommunications architecture, including support issues, unique applications, and opportunities made available through the I-Net. FY 2006 saw the expansion of this strategic plan into a Request for Proposal (RFP) for the design, engineering, and implementation of a new County-wide voice platform. These plans and programs will help the County to meet the telephony needs and requirements of our citizens and employees. Eventually leveraging the high speed – high bandwidth connectivity provided by the County's fiber-optic network – I-Net, Fairfax County will have a fully integrated video, data and telephony Enterprise.

In FY 2007, the County will begin to implement a new telephone architecture with and enterprise-wide VOIP capable system. This project will eliminate the diverse network of disparate legacy telephone systems with a contemporary telecommunications solution that will send call traffic over the County's I-Net infrastructure and integrate with the county's messaging platforms and IP based telephony applications.

5.5.3 Emergency Communications Network

The emergency communications networks that the County maintains are divided into two categories: Public Safety Radio Network and Public Service Radio Network.

PUBLIC SAFETY RADIO NETWORK

Voice Network - The County operates a digital, 800MHz trunked voice radio system that supports the operations of the Police, Fire and Rescue, and Sheriff's Departments, with more than 3,000 mobile and portable radios. This system infrastructure is also utilized by the County's Public Schools Security Department, and by the independent police department of the City of Fairfax, and the Towns of Herndon and Vienna. Equipment is located at eleven locations throughout the county, and all sites are linked together by a redundant VERIZON SONET network. The system provides for voice interoperability with and between the public safety agencies of Arlington County, City of Alexandria, Metropolitan Washington Airports Authority as well as the District of Columbia Fire department.

Mobile Data Network - To support operations of the various public safety agencies, the County operates a 450MHz 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, as well as access to various databases maintained by the Commonwealth of Virginia and the Federal Bureau of Investigation. This system consists of more than 900 Mobile Computer Terminals (MCT) and Vehicular Radio Modems (VRM) in vehicles of the various agencies, with transmitting equipment located at six sites in the County.

PUBLIC SERVICE RADIO NETWORK

The County operates a second 800 MHz trunked radio system that supports more than 3,000 radios for the Department of Public works and Environmental Services, Public Schools Transportation (school buses), Park authority, FASTRAN, the CONNECTOR bus system, and other non-public safety County agencies. This seven-site system replaced a 1980s-era system that had limited coverage and performance in 2005.

In FY 2007, the County will be in the throws of a FCC mandated re-banding effort in the 800 mhz range. This project is challenged by the need to do this while maintaining regional radio interoperability.

5.5.4 Institutional Network (I-Net)

This fiber optic network will arguably become the most cost-effective, viable, and lucrative technological advance the County has experienced since computers first appeared in the County's technology inventory. This fiber optic network will provide virtually "unlimited" bandwidth to meet the County's present and future communication network requirements. It will truly become the "super highway" for the County's internal video, voice and data communication network. Although broadband is available through local telecommunication companies, it comes at a significant price, a loss of flexibility, and for some services, only limited availability. I-Net's "unlimited" bandwidth, albeit with some significant upfront cost, will allow the County to amortize its cost over the life of the I-Net with an overall cost savings.

The County's I-Net fiber network infrastructure will provide broadband capabilities that will transport data, voice and video communications directly to the desktop facilitating high speed data communications, Voice over IP services, video broadcast, video-conferences, streaming video, and distance learning (for example). It will be through this I-Net that the County will truly reach its ultimate goal of converged voice, data and video technologies. The network will have several origination points, and a facility for programming or controlling the switching and routing of data, voice and video signals among all participating sites.

I-Net Voice/Data Service

As with the video world, the I-Net fiber network will provide greater capability for the County's voice and data networks and will allow the County to reach its goal of a truly "transparent" network. The I-Net's broadband capabilities will allow running voice and data services over a single network infrastructure (versus traditional separated networks), and, enhance our Voice over IP services and permit IPTV, videoconferences, and streaming video directly to the desktop. Convergence of our existing voice communications to VoIP and IP telephony will allow the County to reach its long term goal of restructuring its dialing plan to include five digit dialing to and from any County facility and eliminate current packet charges between sites. Additionally, the integration of voice and data paves the way for further County-wide productivity through applications such as: Unified Messaging, integration of the phone system with Exchange/Outlook's address book, Call Center Management, etc.

It should be noted that although the I-Net is envisioned to result in considerable cost savings by replacing a significant portion of the County's Wide Area data Network and intra-County voice circuits, some existing data and voice circuits will remain for backup and redundancy, as well as to meet special functions, such as the 9-1-1 Center and the Emergency Operations Center. In FY 2006, the project team will begin lighting the I-Net fiber and migrating the current network to the I-Net infrastructure.

I-Net Video Network

The County's I-Net fiber network infrastructure will provide broadband capabilities that will transport video communications directly to the desktop facilitating broadcast, videoconferences, and distance learning. The network will have several origination points, and a facility for programming or controlling the switching and routing of video signals among all participating sites. The network will be able to carry signals that can be converted to and from analog video. The video performance characteristics should meet or exceed those established by FCC Standards (Part 73.699) for broadcast video transmission. The network could include telemetry facilities for remotely controlling and adjusting video equipment for such functions as panning, tilting, zooming, and adjusting the lighting. Finally, the network may contain a centrally administered signal security capable of restricting video and audio reception to designated sites.

5.6 INTERNET ARCHITECTURE (E-GOVERNMENT)

The Fairfax County Internet architecture provides significant and wide-ranging opportunities to utilize emerging technology as a means to make information more readily available to County staff, citizens, and businesses. In addition, the interactive nature of the technology allows residents and others to conduct business (e.g., pay taxes, apply for permits, etc.) with the County at their convenience and from their location. Likewise, Internet technology allows access to enterprise data (real estate assessments, Human Services resource database, etc) without the need for a resident to call or visit the County Government center complex.

The e-Government architecture defines the standards, technologies and guidelines for public access, and conducting electronic business among County agencies, state agencies and outside entities. The County's Internet architecture is/will be comprised of the following:

- **High Speed Connection to the Internet -** The County's fractional DS-3 connections to the Internet. This provides access to the Internet 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 within the County. 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, and so on. 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 the same type of facilities but access is limited to County staff.

- **Application Servers** - provide the gateway between the County Web servers and the information stored in County enterprise databases. The application servers do the work of communicating with various databases on the County mainframe and other platforms, accessing and collecting the requested information, formatting the information in the appropriate way, updating the database where appropriate, and returning the result to the Web server for dissemination to the requestor. Application servers also provide additional levels of security to ensure that only allowable information is accessible.

- **The WebBoard Server(s)** - provide a mechanism for visitors to the County site to engage in ongoing discussions in either "real time" chat or, more commonly, by use of a localized version of Internet "newsgroup-style" discussion forums. These forums provide residents the opportunity to discuss a range of topics among themselves as well as with County officials and staff.

- **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: DB2, IDMS, VSAM, Oracle, MS Access, Paradox, and so on. The interfaces are comprised of "Application Program Interfaces" (APIs), Open DataBase Connectivity (ODBC), and other standards that enable the access layer of the web architecture.

5.7 SECURITY ARCHITECTURE

The Information Security Office defines the security standards and policies necessary to protect the information assets of the County. The Security layer employs security principles coupled with a hardware and software infrastructure supported with applicable policies, plans and procedures. This architecture is designed to provide an appropriate level of protection for all County information processing resources regardless of platform. The objectives of the information protection program are to ensure confidentiality of information, integrity of data, systems and operations, technical compliance for HIPAA, privacy and to ensure availability of information processing resources. The basic elements of identification and authentication, access control and monitoring of information processing activities are employed throughout the enterprise.

In view of the dynamic environment of information technology, the security architecture continues to evolve to meet the challenges arising with new technologies necessary to conduct e-Government activities. Identification and authentication, access control, and auditing functions are performed on the specific platforms using the capabilities inherent in the appropriate operating system. Software, hardware and processes are continually evaluated to modernize the infrastructure to permit the County to participate in e-Government activities while still providing secure access to County resources. Fairfax County has implemented a more secure network architecture that takes a greater defense-in-depth approach to network security design. A method of network partitioning and the development of a modular perimeter infrastructure, based on the Cisco "Safe Architecture" are being deployed to better shield important resources within the network. In the creation of these partitions, the County's information technology assets will be designed and configured with specific security requirements based upon their level of trust.

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 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-on or log-on) combined with a unique password. To improve the secure access and authentication to web-based applications as well as backend servers, the County has procured products to provide a solution that resolves today's security issues and positions DIT to leverage this investment and framework in the future. eTrust, through its SiteMinder 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 also being put 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. eTrust will continue to be expanded to provide a secure access and end-user authentication platform for internal and external users. The County's network 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. DIT will continue implementation of modularized, multiple firewalls supporting a variety of specialized application requirements. The County provides Dial-Up, VPN and Web Access technologies for our 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 his or her work site. Remote access is granted to those individuals who are approved telecommuters, users who periodically need to access County Systems from home or other locations, and individuals who need access while traveling.

The County has also implemented an Intrusion Detection System to detect intrusions within the network. Security devices are able to detect signs of an intrusion or an intrusion attempt. Information necessary to detect intrusions are analyzed and reviewed in order to determine if sensitive data, systems or the network is being attacked or if a breach in confidentiality, integrity, or availability has occurred. The primary objective of enterprise security monitoring is to reduce the window of time-to-discovery. With the large quantities of log and alarm data generated by firewalls and sensors, the need for a specialized application to support the role of correlation was chosen. This solution conducts a comprehensive threat assessment and allows for quick identification and drill down of credible threats to the organization in order to expedite detection and response to intrusions.

Security will continue to be a fundamental component of the County's e-business strategy. Fairfax County's secure network architecture takes a greater defense-in-depth approach to network security design. A method of network partitioning and the development of a modular perimeter infra-structure are being deployed to better shield important resources within the network. This modularity achieves the ability to control the traffic that flows to and from one area of the network to any other. In the process of creating these partitions, the County information technology assets utilized will be designed and configured with specific security requirements based upon their level of trust in order to serve specific purposes.

STANDARDS

FEATURED IN THIS SECTION

Fairfax County Information Technology Standards

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Fairfax County
Information Technology Standards
(June 2006)

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 means 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 per the FY2007 IT Strategic Plan.

Fairfax County
Information Technology Standards
(June 2006)

PLATFORM ARCHITECTURE STANDARDS:

END USER SOFTWARE

COMPONENT	CURRENT STANDARDS
Operating System	Windows XP
Word Processor	Microsoft Word 2003
Spreadsheets	Microsoft Excel 2003
Presentations	Microsoft PowerPoint 2003
Database	Microsoft Access 2003
E-Mail Client	Microsoft Outlook 2003 / Outlook Web Access (latest release)
Project Management	Microsoft Project Professional 2003
Graphics	Microsoft Visio Professional 2003
Web Browser	Microsoft Internet Explorer (latest release)
Antivirus	Symantec AntiVirus (latest release) for Workstations and Servers
Patch Management	Microsoft Systems Management Server (SMS) Windows Server Update Services (SUS)
Mainframe Terminal Emulation	3270 Emulation
Thin Client Access	Citrix Presentation Server 4.0
Other	Must be approved for Business Unit standard image/requirements

PLATFORM ARCHITECTURE STANDARDS:
END USER HARDWARE

COMPONENT	DESKTOPS	DESKTOPS/ HIGH END USERS	LAPTOPS	LAPTOPS/HIGH END USERS
Power	Single	Single	Single	Single
CPU	Pentium IV 3.0 GHz 800 FSB	Pentium IV 3.0 GHz 800 FSB	Pentium M Processor 750 (1.86GHz, 2MB L2)	Pentium M Processor 750 (1.86GHz, 2MB L2)
Disk Configuration	80 GB Hard Drive 3.5 Floppy 48X DVD CD-RW Combo Drive	80 GB Hard Drive, 3.5 Floppy 48X DVD CD-RW Combo Drive	80 GB Hard Drive 8X DVD+/-RW	80 GB Hard Drive 8X DVD+/-RW
Memory	1 GB RAM (2 DIMMS) expandable	1-2 GB RAM (2 DIMMS) expandable Graphics Accelerator	1 GB RAM (2 DIMMS) expandable	1-2 GB RAM (2 DIMMS) Graphics Accelerator
Monitor	17" SVGA, Ultra Sharp, Flat Panel	17" SVGA, Ultra Sharp, Flat Panel	Active/Passive Matrix (dependent on laptop resident applications)	Active/Passive Matrix (dependent on laptop resident applications)
Interface Card(S)	Ethernet 10/100/ 1000 Base- T	Ethernet 10/100/ 1000 Base- T	Built-in Ethernet card	Built-in Ethernet card
Operating System	Windows XP	Windows XP	Windows XP	Windows XP
File System	NTFS	NTFS	NTFS	NTFS
Maintenance	4 Year on-site, next business day	4 Year on-site, next business day	4 Year on-site, next business day	4 Year on-site, next business day
Additional Hardware Requirements	UL Approved Surge Processor (new) Sound Card 2 USB Ports	UL Approved Surge Processor (new) Sound Card 2 USB Ports Graphics Media Accelerator (as warranted)	UL Approved Surge Processor (new) Back-up Battery Docking Station (if used as desktop) Security Lock	UL Approved Surge Processor (new) Back-up Battery Docking Station (if used as desktop) Security Lock
Pre-Install Options	All components (hardware) installed	All components (hardware) installed	All components (hardware) installed	All components (hardware) installed
Platform	Dell	Dell	Dell	Dell

PLATFORM ARCHITECTURE STANDARDS:
HAND HELD MOBILE DEVICES

COMPONENT	CURRENT STANDARDS
Platform	RIMM/Blackberry
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. 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 2003 Standard Edition Microsoft Windows Server 2003 Enterprise Server (clustering or servers with 4 processors or more) Solaris (latest release) z/OS 1.4
Thin Client Access	Citrix Presentation Server 4.0
Hardware	Intel (Windows) SUN (UNIX) IBM Z-Series (Mainframe)
Backup	Tivoli Storage Manager 5.2 z/OS DFSMS
Storage	SAN
E-Mail	Microsoft Exchange Server 2003 Enterprise Edition L-Soft LISTSERV
Web/Application Servers	Preferred: Microsoft Internet Information Server (latest release) Apache Web server (if required by COTS package) Tomcat (if required by COTS package) JBOSS (for Jacada) BEA Systems WebLogic
Communications Protocol	TCP/IP
Configuration/Change Management	Infra – ITIL Service Management

PLATFORM ARCHITECTURE STANDARDS:
FILE / PRINT / WEB SERVERS

COMPONENT	FILE / PRINT SERVERS	WEB SERVERS (INTEL)	WEB SERVERS (UNIX)
Type	INTEL	INTEL	UNIX
Power	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident
Fault Tolerance / Disk Configuration	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 utilizing SAN if EOC resident	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 utilizing SAN if EOC resident	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 utilizing SAN if EOC resident
CPU	Dual 3.0 MHz	Dual 3.0 MHz	Dual 1.5 GHz
Network Interface Cards	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T
Operating System	Windows 2003 Server	Windows 2003 Server	Solaris (latest release)
Monitor	17" SVGA Color, if non-EOC site Not required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack mountable Flat LCD monitor Required if EOC resident
RAM	4 GB Minimum Cache 256MB	4 GB Minimum Cache - Database/Application specific	4 GB Minimum Cache - Database/Application specific
File System	NTFS	NTFS	Solaris
Third Party Software Requirements	Symantec Antivirus, Enterprise Edition MS SMS Client	Symantec Antivirus, Enterprise Edition eTrust SiteMinder Agent MS SMS Client	Symantec Antivirus, Enterprise Edition eTrust SiteMinder Agent
Web Server Software	N/A	Internet Information Server (latest version) Tomcat (if required by COTS package) BEA Systems WebLogic	Apache (if required by COTS package) Tomcat (if required by COTS package)
Platform	Dell	Dell	Sun
Maintenance	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included
Additional Hardware Requirements	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM & Tape Drive (DDS-4)
Pre-Install Options	None	None	None
Storage And Backup	Tivoli Storage Manager Enterprise Backup Client	Tivoli Storage Manager Enterprise Backup Client	Tivoli Storage Manager Enterprise Backup Client

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 EOC-resident	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident
Fault Tolerance / Disk Configuration	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives - Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)
CPU	Quad 3.0 Mhz	Quad 1.5 Mhz	Dual 3.0 Mhz	Dual 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 Server Windows 2003 Advanced Server (Clustering)	Solaris (latest release)	Windows 2003 Server Windows 2003 Advanced Server (Clustering)	Solaris (latest release)
Monitor	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Required if EOC resident
RAM	8.0 GB Minimum Cache - Database/Application specific	8.0 GB Minimum Cache - Database/Application specific	4.0 GB Minimum Cache - Database/Application specific	4.0 GB Minimum Cache - Database/Application specific
File Systems	NTFS	Solaris	NTFS	Solaris
Third Party Software Requirements	Symantec Antivirus, Enterprise Edition MS SMS Client	Symantec Antivirus, Enterprise Edition	Symantec Antivirus, Enterprise Edition MS SMS Client	Symantec Antivirus, Enterprise Edition
Platform	DELL	SUN	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	5 Year, 24/7, 4 hour on-site, parts & labor included
Additional Hardware Requirements	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Internal Tape Drive for Root Volume Backup Minimum 2 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Internal Tape Drive for Root Volume Backup Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive(DDS-4)
Storage And Backup	Tivoli Storage Manager Enterprise Backup Client TDP for Oracle or SQL server	Tivoli Storage Manager Enterprise Backup Client TDP for Oracle or SQL server	Tivoli Storage Manager Enterprise Backup Client	Tivoli Storage Manager Enterprise Backup Client

APPLICATION ARCHITECTURE STANDARDS:

APPLICATION DEVELOPMENT

COMPONENT	MAINFRAME	UNIX	INTEL	INTERNET / INTRANET	GIS
Database Software	DB2	Oracle 10g	SQL Server (latest release) Oracle 9i Oracle 10g	N/A	Oracle 10g Oracle Spatial DB
Application Development Frameworks	N/A	Java	.NET Framework (latest release) Java	.NET Framework (latest release) Java	.NET Framework (latest release) ESRI
Virtualization	N/A	VMware (Linux)	VMware	VMware	N/A
Software And Development Tools **(Report Writing Products Are Listed On Page 8.)**	COBOL CICS TSO JCL	N/A	Microsoft Visual Studio 2005 Eclipse	Microsoft Visual Studio 2005 Eclipse	ArcGIS 9.1 & Extensions ERDAS 9.0 ARC Internet Map Server 4.0/9.1 ArcSDE 8.3/9.1 ArcPad 7 Microsoft Visual Studio 2005
Version And Release Control	Custom Process	PVCS	PVCS	PVCS	PVCS
LDAP / Directory / Authentication	RACF	Native operating system (Solaris, Linux, AIX)	Active Directory Enterprise solution TBD	Active Directory e-Trust SiteMinder	Native Operating system
Data And Process Modeling	MS Visio Professional 2003 Allfusion Erwin Data Modeler	MS Visio Professional 2003 Allfusion Erwin Data Modeler	MS Visio Professional 2003 Allfusion Erwin Data Modeler	MS Visio Professional 2003 Allfusion Erwin Data Modeler	MS Visio Professional 2003 Allfusion Erwin Data Modeler
Middleware (EAI)	webMethods Jacada	webMethods	webMethods	webMethods Jacada	N/A
Workstation Requirements	3270 Emulation TCP/IP Connectivity	Oracle Client Suite ODBC Drivers	Oracle Client Suite ODBC Drivers	MS Internet Explorer (latest release)	Terminal Server Client Citrix Metaframe Client Active X Plug-in Active Directory Tools

PLATFORM ARCHITECTURE STANDARDS:
ENTERPRISE SOLUTION PLATFORMS

PLATFORM	CURRENT STANDARDS
Report Writing: **Departmental Reporting Needs**	Business Objects Microsoft SQL Reporting Easytrieve Plus
Statistical Analysis	SAS
Enterprise Reporting **Business Intelligence**	Selection Pending
Document Scanning/Imaging	Documentum Enterprise Content Management
Web Content Management	Documentum Web Content Management
Web Search Engine	Verity K2 Enterprise
Survey Instrument Software	SNAP 8.0 ProNet Edition (w/Scanning module)
Correspondence Tracking	Intranet Quorum
CRM	Selection Pending
IT Services Management	Infra – ITIL Service Delivery
GIS	ArcGIS 9.1 & Extensions ERDAS 9.0 ARC Internet Map Server 4.0/9.1 ArcSDE 8.3/9.1 ArcPad 7

FAIRFAX COUNTY DATA COMMUNICATIONS STANDARDS

NETWORK INTERFACE CARDS

MOTHER BOARD	PRIMARY NIC	SECONDARY NIC	LASER PRINTER NIC
Ethernet	3COM	IBM	HP Jet Direct
The exact make and model is determined by the end-station standard. *Secondary NIC is a backup product in case of difficulty with the availability of the Primary NIC or special end-node requirements.* *All IP-addressable printers.*			

NETWORK PROTOCOLS

CURRENT	FUTURE
TCP/IP	TCP/IP only
SNA (DLSW)	
OSPF	

CABLING STANDARDS (Structured cabling based on the ANSI/TIA/EIA and ISO standards)

Horizontal (cabling and pathways)

CURRENT	FUTURE
CAT5/5e UTP and SCTP	CAT6 UTP and SCTP

Outlets

CURRENT	FUTURE
Category 5 / 5e Cabling	Category 6 Cabling
Siemens 4 outlet modular faceplates	
Color-coded inserts *(to identify the media being used in each outlet)*	
Voice and data terminated at the same faceplate	

Between Buildings/Backbone

CURRENT	FUTURE
Dependent on Distance	Investigating wireless between buildings and within certain areas of buildings
12 strand "single-mode" OFNP, single mode optical fiber.62.5/125 and 5/125 OFNP multi-mode and single-mode optical fiber	

NETWORK HARDWARE

ROUTING
Cisco 2600 Family
Cisco 4500 Family (Layer 3)
Cisco 6500 Family (MSF C)

SWITCHING
Cisco 6500 Family – Core applications (MDF)
Cisco 4500 Family – Wire Closet (Medium to Large IDF)
Cisco 2950 Family – Wire Closet (Small to Medium IDF)

Fairfax County Enterprise Network LAN infrastructure is a purely switched environment. The size of the switch used is based on the size of the workforce supported. The fixed chassis switches such as the 2948G, 2950/24, and the 2950/48 are used only in cases were the workforce supported is less than 48 total devices. After that breakpoint a chassis style switch is used.

FIREWALLS
Cisco Cisco PIX family

CONTENT/CACHING ENGINE
Cisco 7305-K9

CONTENT SERVICES SWITCHING/LOAD BALANCING
Cisco css-11000 Family