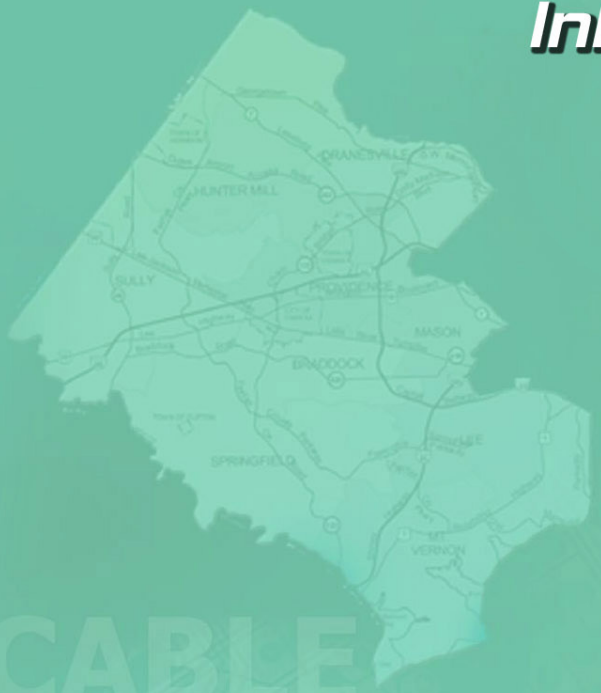
FAIRFAX COUNTY, VIRGINIA

www.fairfaxcounty.gov

Department of Information Technology



Fairfax County
VIRGINIA

FY 2005 INFORMATION TECHNOLOGY PLAN

FAIRFAX COUNTY
INFORMATION TECHNOLOGY PLAN

FY 2005

PREPARED BY

The Department of Information Technology

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January 2004

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Fairfax County
VIRGINIA

SECTION 1

INTRODUCTION

INTRODUCTION

FEATURED IN THIS SECTION

SECTION 1...
INTRODUCTION

1.1 PLAN OVERVIEW

Like many governments that are faced with growth in demand for services and a difficult economy, the County is faced with major challenges and opportunities. These challenges and opportunities are caused by the heightened expectations of the County's constituents — citizens and the business community to interact and conduct business with the County, and, employees — to use technology to accomplish their daily tasks. This expectation occurs within an environment of rapid change and finite resources. To be successful, the County's Information Technology (IT) must operate effectively and efficiently to ensure better services, better products, shorter project life cycles, less cost and more convenience.

To ensure that Fairfax County IT can meet this challenge, continued emphasis must be put on projects that keep our technical infrastructure a strong foundation for IT applications and services, allow County government to communicate easily internally and with the community, and allow easy access to County data and services. Emphasis is also needed to ensure that IT projects are managed consistently, are cost effective, and are aligned with County's strategic goals and that there is a proper level of oversight and tracking of IT investments.

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 objectives; project accomplishments for on-going efforts; 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 E911 — Fund 120. Sometimes projects are included in the IT Plan that are funded from other agency resources to take advantage of total available dollars, to augment investment fund funding capacity and avail additional opportunities to meet goals for of the IT planning process. Ongoing IT 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 in this plan, but 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 Information Technology requirements of all agencies, lines of business, and services. Additional details of each fund can be found in the Fairfax County Fiscal Year 2005 Adopted Budget Plan.

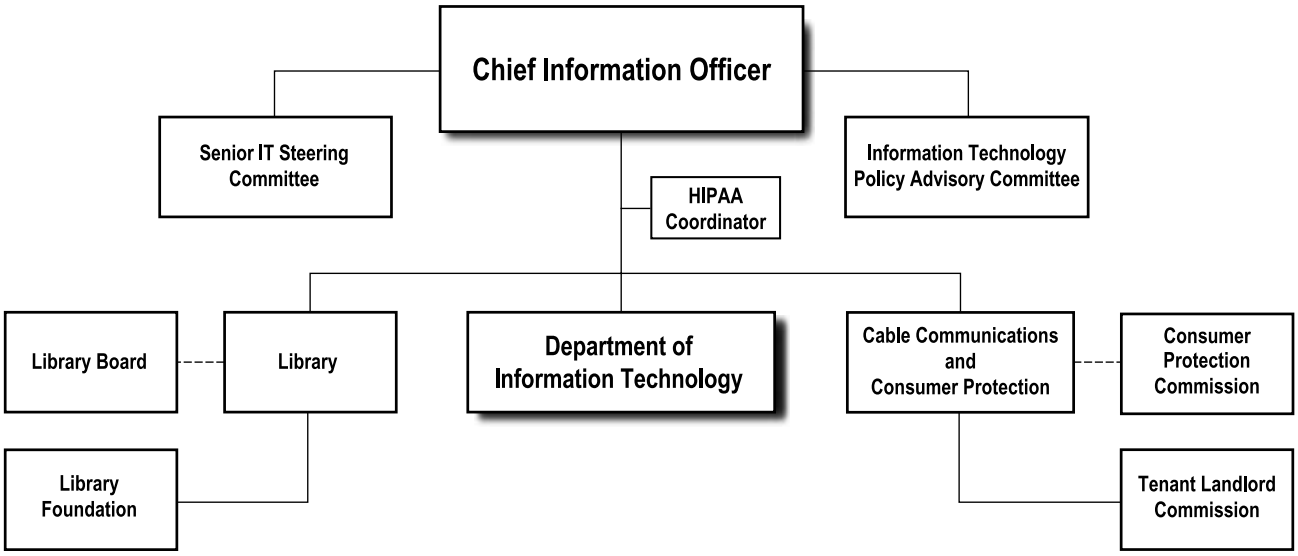
INFORMATION TECHNOLOGY GOALS

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 the latter part of 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 scarce resources could be directed and accomplishments identified and categorized.

Beginning FY 2004, based on global changes in social and economic paradigm shifts, new priorities were adopted for funding. These were re-validated for FY 2005:

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

1.2 CHIEF INFORMATION OFFICER ORGANIZATION



The County's Chief Information Officer (CIO) is responsible for the overall management of technology and information resources. The Board of Supervisors has broadened the role of the CIO since the position was created in FY1995. Not only is the CIO responsible for oversight of the Department of Information Technology, the CIO is also responsible for a broad range of information related departments. The Fairfax County Library, the Department of Cable Communications and Consumer Protection, and the Health Insurance Portability Accountability Act (HIPAA) Compliance Office also report directly to the CIO. The Office of Public Affairs information function works closely with the CIO for integrity of content for published information served through the WEB programs. The CIO's direct responsibility for information spans policy, books, television, technology, consumer protection and the management of documents.

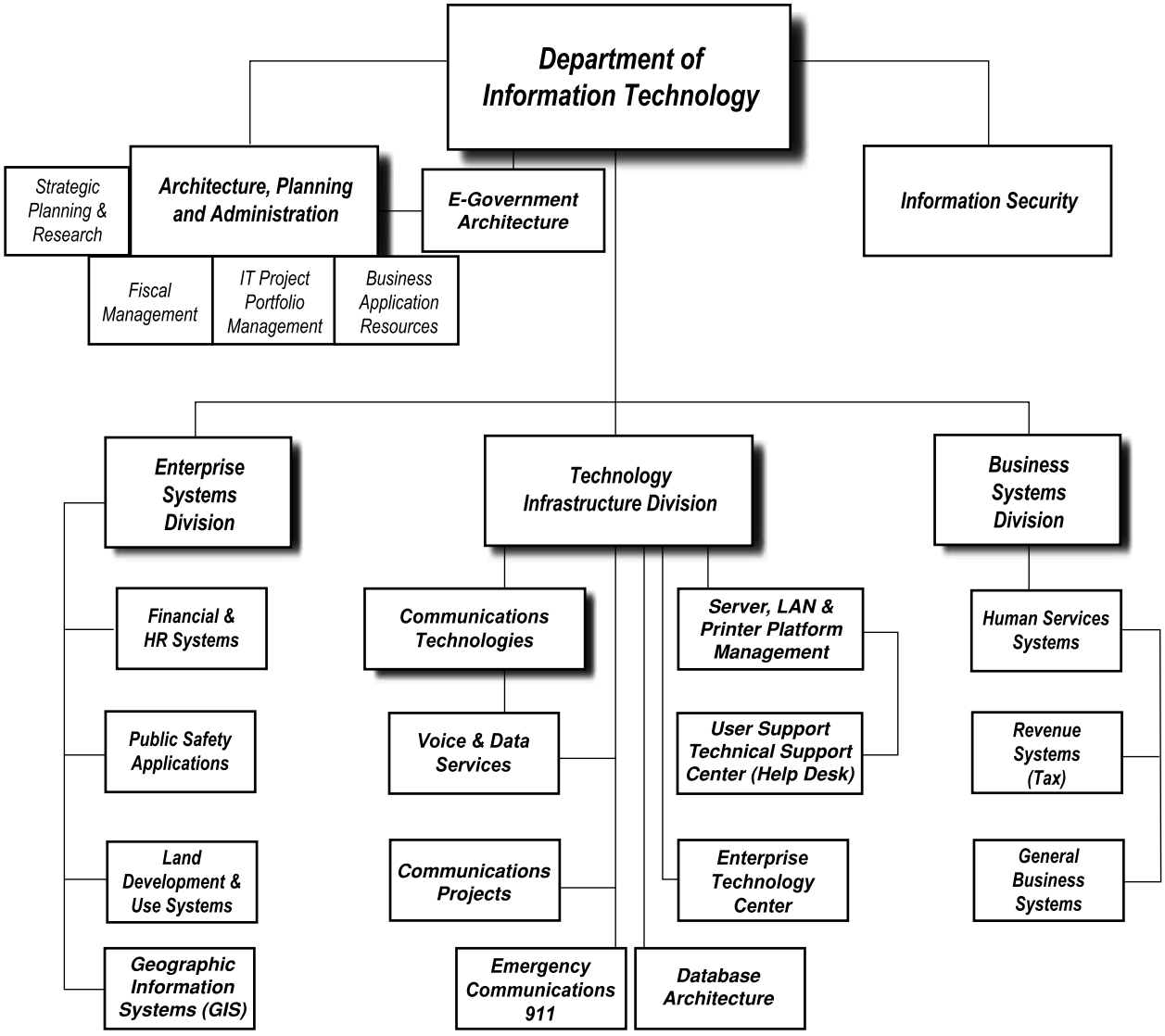
To assist the CIO with technology direction and validation of trends, the Board of Supervisors in FY1998 created a private sector group called the Information Technology Policy Advisory Committee (ITPAC). The group is made up of 10 members appointed directly by the Board of Supervisors and five members 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 monthly 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 the board of directors to the CIO, providing advice, experience and support for the IT program.

In FY1999 an internal County group, the Senior IT Steering Committee, was created to assist and advise the CIO and CTO. Today, this group includes the County Executive, Chief Financial Officer, Deputy County Executives, Chief Information Officer, 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 quarterly 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 CIO to the ITPAC for its endorsement.

The current CIO Organization depicted below 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.

Fairfax County
DEPARTMENT OF INFORMATION TECHNOLOGY
ORGANIZATION CHART



1.2.1 Department of Information Technology

The Department of Information Technology (DIT) contributes to an efficient and productive County government by providing leadership 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 current organization structure of the Department of Information Technology (DIT) as indicated in the diagram below 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 distributed systems, from local area networks to web based and wireless hand-held computers, as well as in the number of platforms and distributed 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 and Geographical Information Systems; Business Systems Division which also supports specific agency business areas; Technology Infrastructure Division that manages all hardware, communications and network platforms enterprise-wide, integration tools, enterprise messaging applications 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. The Architecture, Planning and Administration Division provides support to all IT activities including standards, IT portfolio management and IT policy support, and architectural direction including web, CRM, and information architecture.

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.

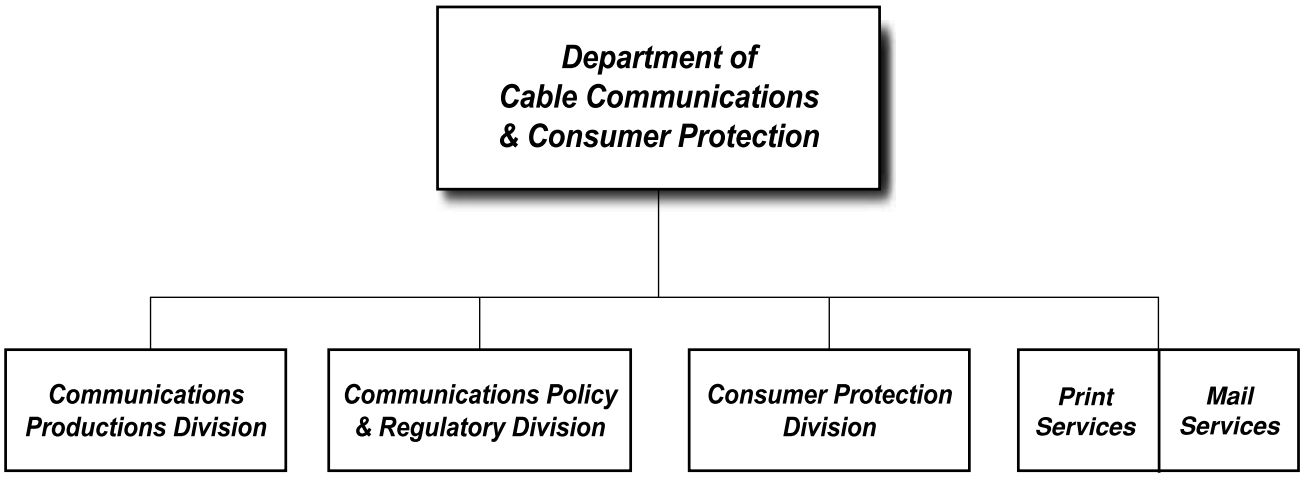
Goal 8: Ensure effective technical and fiscal management of the department's operations, resources, technology projects and contracts.

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, interoperability, cost effectiveness, and mitigate the risk of dependence on individual vendors.
7. Provide a solid technology infrastructure as the fundamental building block of the County's IT architecture to support reliability, performance and security of the County's information assets. Manage and maintain the enterprise network as an essential communications channel connecting people to information and 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 in 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 and 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

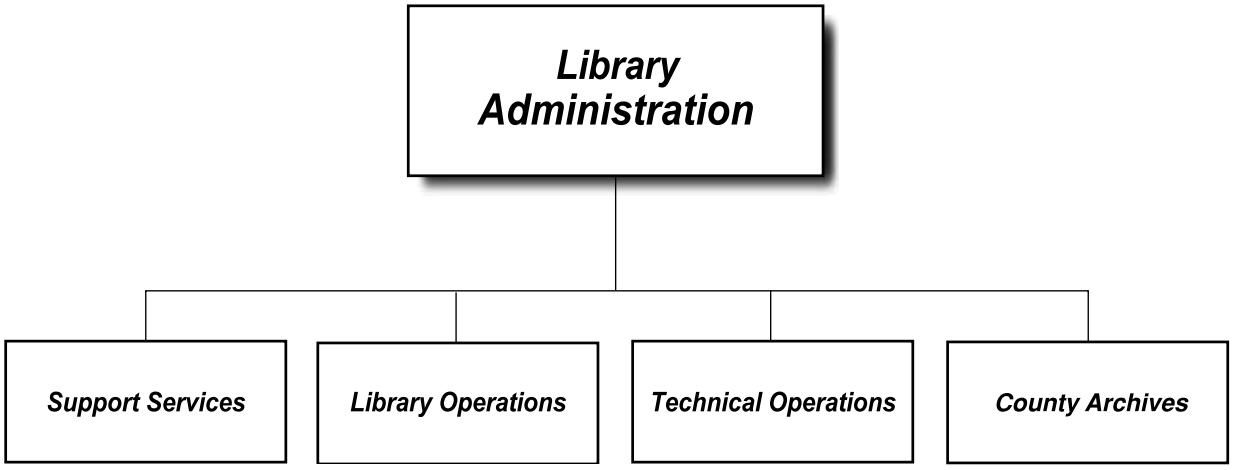
To provide and to encourage the use of library resources and services where the Fairfax County Public Library can best meet the evolving educational, recreational, and informational needs of all the residents of Fairfax County and Fairfax City, thus enhancing individual and community life.

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 FY2003.

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, chaired by the Chief Information Officer, 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, Chief Information Officer (who is the Chair), two Deputy County Executives, Chief Financial Officer, the Director of the Department of Management and Budget and the Director of the Department of Information Technology/Chief Technology Officer (CTO). The committee may activate a number of sub-committees around specific issues that would report back to Senior IT Steering. The Committee presents strategic policy issues before the Senior Management Team comprised of all department heads as a part of its decision making process.

Fairfax County VIRGINIA

SECTION 2

STRATEGIC DIRECTIONS AND INITIATIVES

STRATEGIC DIRECTIONS AND INITIATIVES

FEATURED IN THIS SECTION

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.

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 thrust in integrating the WEB, IVR and Kiosk platforms in to provide a complete public access to services and programs. In FY2005, the county will continue its efforts to add new services to the e-government channels, including new transactions and e-payments. An exciting pilot which is the first of its kind will extend interactive cable TV capability over the cable system as a web channel to conduct services with the county. 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 2004 accomplishments for e-Government initiatives included new applications such as Calendar of Events, Reporting Tax Evaders, Digital Map Viewer, My Neighborhood and Applicant Information Management System (AIMS) system used for submitting resumes for County employment, A new e-notification and alerting system was implemented, which aided in communicating critical information via messages through web and e-mail to computers, laptops, PDAs, cell phones and other mobile communications devices supporting emergency management and other key services. We also redesigned information architecture for the kiosk and replaced kiosk hardware and enclosures. We have upgraded our infrastructure architectures by converting to Windows 2000, and implemented. Net frame which has enabled and positioned us to take advantage of features like text-to-speech, speech recognition, XML and web services. The public web site *www.fairfaxcounty.gov* main subject area pages (Living, Doing Business, Visiting and Government) have been revamped and updated. Significant enhancements of the site included: News & Information section, Emergency Information, Local Weather and improved navigation. A new wireless platform was introduced which allows citizens to access information via mobile devices, such as Personal Digital Assistance (PDA), cell phones etc.

Goals for FY 2005 are to continue building new e-service transactions, e-payments and to enhance and support existing applications. DIT will continue to build and improve the infrastructure architectures in order to meet new requirements. DIT will introduce a new platform, Interactive Cable TV, which will allow the citizens to obtain information and services in the comfort of their

home. DIT will consolidate the architectures of IVR, Kiosk, Web, Infoweb and Wireless technologies with the ultimate goal being the enhancement of both the information and infrastructure architectures supporting e-government initiatives, which will facilitate the delivery of integrated and accurate information to citizens via multiple platforms along with an improved web search. Delivery of integrated and accurate information to citizens across multiple platforms will be achieved through full implementation of a Content Management System (CMS).

CUSTOMER'S SERVED:

Kiosk: over 7,529,000 "Screen Touches" to date or over 361,160 total users

IVR: 852,000 total calls

Web: 578,000 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*
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*
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*

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 integrates the need 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) which 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 working on the Information Architecture Framework described above and implementing the Content Management System tool (Documentum is the tool selected), the following was also accomplished:

- Classified the variety of information types currently offered on the Web Site
- Analyzed workflow processes for contributing content to the Web
- Analyzed integration possibilities for Web and Kiosk Content
- Explored delivery platforms for Mobile Content (i.e. Wireless “Contact Us” Pilot)
- Developed an XML Document Model for Static Content
- Identified Metadata to be associated with Static Content; and
- Developed a Draft Technical Architecture for Content Management

Goals for FY 2005 as they relate to Integrated Content and Document Management are to:

- ❖ Continue 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
- ❖ Finalize the enterprise architecture for Content Management
- ❖ Implement and configure the Content Management software according to the architecture
- ❖ Develop the template and methodology for agency web files which are currently on the county's WEBsite
- ❖ Convert the content of those files to XML
- ❖ Deliver that singular 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, initiative employs technology at the beginning of a document's life cycle, using the system to 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, best in breed products for content management engines also incorporated document management needs. The integrated solution 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. Document imaging 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 requirement for use of paper documents in certain business processes, which can be addressed through the growing scope of imaging technology. Because of legal mandates, many government processes are 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 increasing investment in this technology is closely tied to these business trends as well as the growing document management needs of its agencies.

In FY2005, the County will continue to implement IDM technology for document work flow projects in the Office of the Sheriff, the Juvenile and Domestic Relations District Court (described in greater detail in Section 3, Information Technology Projects), and, new business processes in the Department of Finance and the Department of Family Services. Business requirements for these projects were defined during FY 2004. Although the individual departmental business requirements vary for the use of IDM technology, the following benefits and quality improvements will result 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 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

These projects will also facilitate disaster planning efforts to ensure business continuity. 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. 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)

There has been a paradigm shift over the last decade in the way Fairfax County conducts business. The number of web based transactions, phone calls, e-mails and faxes to the County has increased, while the number of walk-ins has decreased as citizen and business expectations for convenient customer service and accurate information continues to grow. In response to these changes, the County has successfully entered into the world of customer relationship management technology (CRM), which has yielded better responsiveness and improved internal efficiencies. CRM technology has been implemented in the offices of the Board of Supervisors, the Clerk to the Board, Office of Public Affairs, Consumer Protection, Human Rights office, Department of Public Works and Environmental Management, County Executive and the County's Legislative function within the County Executive's office. Efforts continue with projects for the Department of Transportation beginning with contact management, and in the Department of Human Services Systems for improved response and management for constituent services.

Incorporation of CRM technology has yielded numerous benefits for constituents and the multiple County offices and agencies using CRM since its implementation. The Web enabled system 'Internet Quorum' replaced several obsolete custom applications. This platform has become the County's standard solution for tracking contacts and resolution, with improvements made in the underlying infrastructure that allows multiple user agencies to use the system under an enterprise approach, making the allocation of system resources and support more efficient.

The system provides the following diverse functionality: integrated management of correspondence; the ability to proactively message constituents; the capability for Consumer Protection investigators to better manage their cases; access to historical data; the ability to collaborate and relate data together; downloading of legislative bills from the General Assembly session directly into the system, eliminating retyping; capabilities for imaging and workflow and other time saving functions. The Consumer Services information in the system is available online, and allows constituents to conduct their own research as well as report problems to the department via the Web.

There have been significant staff productivity and efficiency improvements with the use of CRM. County staff can now conduct business more proactively, mining the results of interactions and services. This allows staff the opportunity to be more involved in the mission and goals of their agencies and to better respond to constituent needs. The system has a powerful relational database back-end, which reduces the time and resources needed to support the application and its infrastructure. Opportunities for staff to participate in telecommuting and flextime work hours have dramatically increased.

In the Board of Supervisors offices and the Office of Public Affairs, the CRM system is used to record, route and manage interactions with constituents and organizations. The benefits include integrated management of correspondence, which handles contacts of every kind including letters, e-mail, faxes, phone calls, visits, and meetings. The system reduces the amount of time staff spend researching the status of various constituent contacts; and provides the ability to efficiently track and report on the various large cases in a supervisor district as all information is stored in one place; improved service delivery to constituents due to proactive notifications concerning local matters of interest; and system integration with other technologies such as imaging which improves ability to find and retrieve documents easily. The software also tracks the creation of outgoing letters and scanned incoming documents that are linked to the constituent's correspondence history.

The Clerk to the Board of Supervisors uses the Boards and Commissions module to allow users 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 staff to share online information pertaining to the same or similar consumer protection violations, and facilitates collaboration between 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 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 into the County's CRM 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 investigators to meet multiple requirements. It also streamlines complex discrimination processes and addresses privacy concerns for investigator and conciliators.

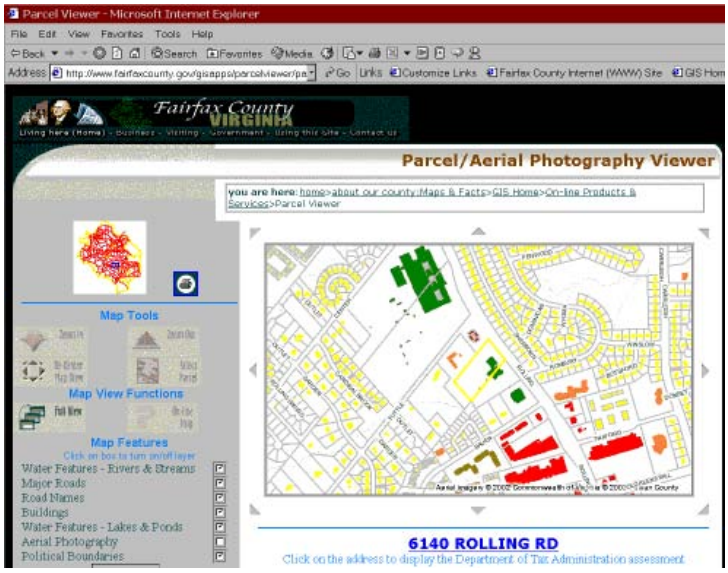
Future System Enhancements

County agencies and DIT will continue to assess business processes within the County to maximize the opportunities for increased use of the CRM. A comprehensive and flexible workflow capability will provide the tools needed to deliver strong citizen service and improved business processes. Future enhancements will include adding workflow routing functionality, based on subject matter, in County agencies, starting with business flows in the Department of Public Works and Environmental Services. The individual workflows will be integrated by the automatic importing of electronic messages or other communications and routed to appropriate staff members. Other modules will be added, including an Internet Mail Agent, which will manage and filter electronic mail. Integration of the County's Geographic Information Services (GIS) via a simplistic application interface allows pinpointing of related complaints or contacts within a specified geographic area. The robust GIS layers available for this mapping application are advantageous to the full range of Intranet Quorum users.

The ultimate goal with CRM is to provide the County with an enterprise-wide, automated, full function distributed Constituent Contact Center solution that will provide citizens virtual one-stop customer service within the County. It will organize the tracking and monitoring of communications, cases, contacts, events and complaints. This Web-enabled solution will provide a robust, consistent foundation for managing all citizen relationships. The County will utilize a knowledge-based, centralized repository of data, and will ensure all call taker analysts have the most current information at their fingertips, regardless of the communication source. This enhances access to one-stop services via the County Web site, Kiosks, IVR systems, fax, e-mail as well as by voice with one simple phone number, allowing the County to leverage emerging technologies as it move's 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. Through Computer Telephony Integration (CTI), internal calls or transferred calls will be presented to call taker analysts along with a "screen-pop" of information from agency case systems and databases relevant to the citizen's call. This integrated approach will ultimately give the County the opportunity to better develop relationships with citizens and more effectively focus resources to address their needs. Over time, Enterprise CRM technology and the Constituent Contact Center will enhance citizens' confidence in County government.

To ensure access to the widest range of information, and to build a comprehensive knowledge base for call taker analysts to assist citizens, the Constituent Contact Centers will be able to form service level agreements and partnerships with appropriate state, federal, and private entities that are partners with the County in service delivery. In FY 2004, plans are to place more emphasis in the Department of Human Services Systems, providing the capability to implement the solution in other county call centers in place now. The Contact Centers will track all interactions, ensuring closed-loop resolution. The centers will be customized to route interactions and manage cases based on each agency's given business requirements. Incoming contacts can be routed to groups based upon selected criteria, levels of access or other parameters. Agencies will be able to monitor and manage workload and performance with a comprehensive set of analytical tools for real-time and historical reporting.

2.5 GEOGRAPHIC INFORMATION SYSTEM (GIS)



Fairfax County's GIS has continued its growth in users within the County Government as well as by public users via the internet. 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 NACo for its use of GIS in the reapportionment 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. In FY 2005, Fairfax County will continue increasing the opportunities provided by GIS with the following goals: increase the use of GIS across the County; increase the number of applications using GIS, particularly web-based applications for the public; increase the production of mapping products from digital data; and increasing the amounts of GIS data available to County staff as well as to the public through new data acquisition and data sharing agreements with the state, local governments and utilities.

The GIS data warehouse consists of over 1 Terabytes (TB) of digital color aerial imagery (raster data) for the County, and over 25 Gigabytes (GB) of vector data. The aerial imagery is comprised of scanned raw imagery and digital orthophotography. Some of the aerial imagery is now being served via the Web to County residents and the general public.

The vector data enables linkage of County data to the GIS. These data comprise over 50 million data elements in over 200 layers of geographic information. The vector data consists of property data: 341,000 parcels, 360,000 addresses, 11,000 subdivisions, 200 zoning overlay districts, 6,000 zone areas and 8,200 zoning cases; planimetric data including 600,000 contour lines; 4,000 miles of roads, 3,000 miles of water ways, 250,000 buildings; and thematic information like school attendance areas, public facilities and fire response zones. New data added in FY 2004 include sanitary sewer lines and structures, and new Chesapeake Bay Resource Protection areas and portions of the

comprehensive plan and of storm sewer infrastructure. Parcel data is also available via the County's Internet site.

In FY 2004, the GIS Branch completed digitization of the parcel and zoning data in record time (early February). This will enable the Parcel and Zoning books for CY 2003 to be printed and delivered earlier than before. Last year, the GIS Branch published two distinct sets of property and zoning books. The first set was delivered in September 2002 and contained the property maps for Calendar Year 2001 (through December 2001). In May 2003, GIS delivered the property and zoning maps for Calendar Year 2002 (through December 2002). This was a significant first for GIS, being able to turn around the property and zoning maps within five months of the cutoff of receiving parcel and zoning changes, which occurs on the last day of each year. The increased speed was directly related to the fact that in the zoning and parcel books are now produced directly from the GIS data warehouse.

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 early 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 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 VGIN'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 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. In FY 2005 we will determine a method to maintain and share centerline information with the VGIN and VDOT so that each participant has up to date street centerline data.

GIS usage over the web continued to grow in FY 2004. In FY 2003, over 1.8 million dynamic maps were served over the Web. The new web application provides detailed pre-made property and zoning maps for free over the web. These maps can be downloaded and printed at 8.5" x 11" through 3' x 4' in size. Two other types of maps were also made available: contours and topography. DPWES also added pre-made resource protection maps to the set. Overall 2,220 pre-made maps are available. They are updated daily as changes

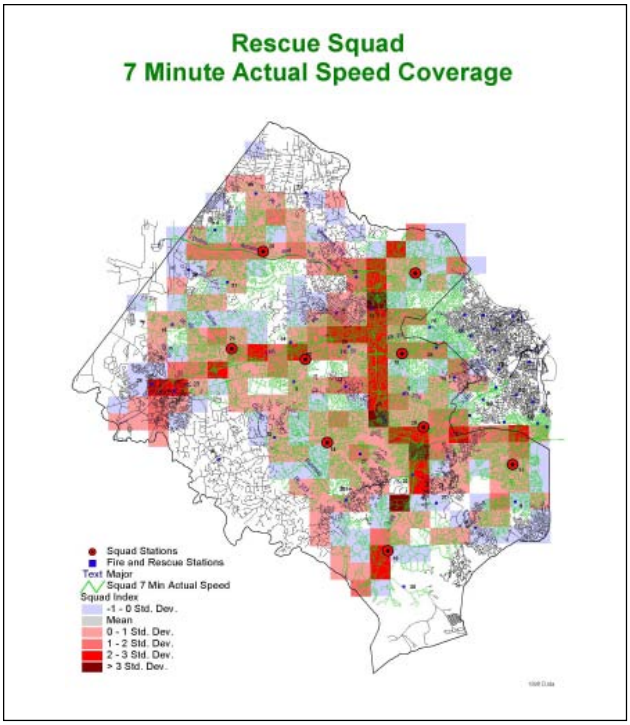
occur. The quick updates are an advantage of having a completely digital mapping process. Request to download these maps more than doubled, from 160,000 in calendar year 2003. GIS now has 50 layers of GIS data for free downloads via the internet. That application has also increased web usage.

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.
- 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 will be completed in FY 2005.
- Public users can now check on the status of permits for development and view maps of the work via the internet.
- GIS was used extensively in planning for and responding to flooding from Hurricane Isabel.
- 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.
- The Department of Planning and Zoning uses GIS regularly in its planning activities, and is in the process of converting the paper based comprehensive plan to an interactive GIS. This will enable them to continue with the process of making the comprehensive planning documents completely digital.
- The GIS now contains data from the Fairfax County Water Authority and the City of Fairfax on hydrants and water mains.

In FY 2005, 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. In past years, The Department of Tax Administration, the Fire and Rescue Department and Department of Health have each added a GIS position, and Department of Transportation and DPWES added several full-time GIS positions. The challenge now is to foster, broaden and integrate that growth 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.

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 and systems to ensure reliability. Critical applications are monitored around the clock and staff members are on call if system outages occur outside of work hours.

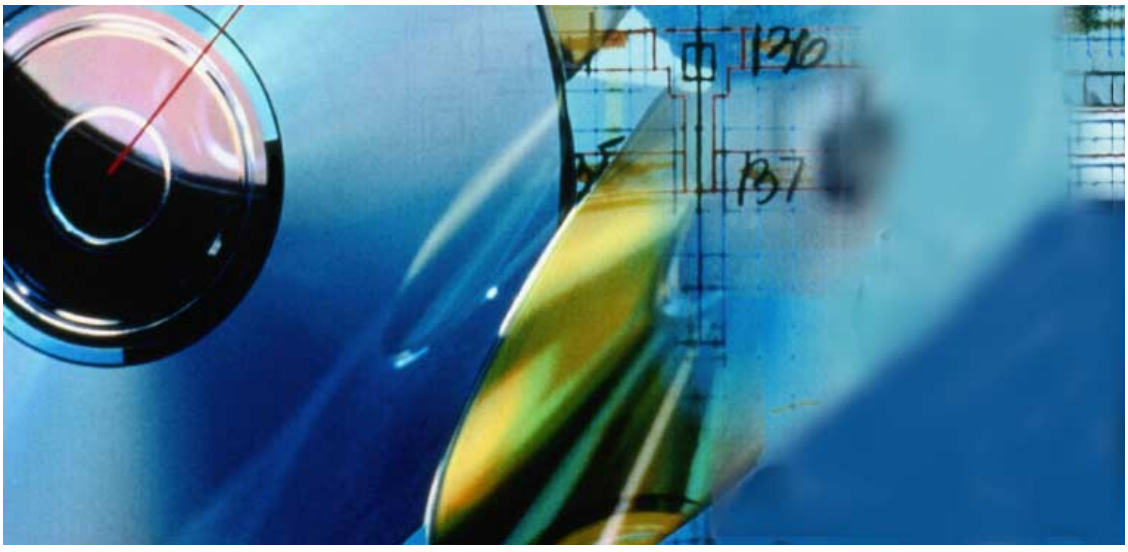
System connectivity is essential for thorough integration of GIS into County operations. It involves establishing robust, reliable and preferably real-time links between the GIS data warehouse and other vital county databases like REABS, the Land Development System (LDS) and others. GIS staff will be 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 INSPECTION 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 work-groups 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 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 FY2004, the focus shifted to configuration and implementation of the new suite of software products. The result has been the successful implementation of the first two phases of the project — Complaints Management and Contractor Licensing.

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
- Plan Review Comments Web Application
- 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 hardware and software solution is consistent with County standards and fits well with County's e-government strategy of using emerging technologies to enhance services. In FY 2005, much 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 County government. 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.

The goal of integrating voice, video and data communications onto a common structure, which has been envisioned since the early 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. However, the Department of Information Technology (DIT) believes that the technology will soon be stabilized to the point where the risk of implementation will be acceptable to the County. As a result, DIT is recommending a hybrid strategy for voice services, utilizing convergent-ready Hybrid Digital PBX technology.

This hybrid PBX/IP-based strategy will minimize service quality risk by utilizing current generation PBX technology for the bulk of the immediate County voice communications needs. By introducing IP-based telephone service at the smaller sites, they can be brought into the common voice architecture, without investing in larger more expensive PBX equipment for these smaller sites. This approach is not without some service quality risks at the smaller sites. Careful planning will signifi-cantly reduce the risks involved in converging IP data traffic with IP voice traffic onto one data network.

DIT believes 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. And it is in full alignment with the County's principle of implementing contemporary, but proven, technologies.

The following six strategic goals for Fairfax County voice services were developed and reviewed with senior County technology managers. 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.

Technical Requirements

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:

System Topology:
Create an architecture that minimizes installation of independent phone systems for various sites

The future switch architecture must support the County's integrated network philosophy, and do so with a single logical architecture. It must support utilization of the I-Net. The solution must address the large number of County locations of various characteristics, supporting a variety of business and operational needs of county agencies. It must be scalable and expandable. There should be a suitable range of configurable telephone instruments and feature sets. It must also support a wide variety of trunk types and speeds and it must address the following requirements:

Feature Requirements:
The voice network infrastructure must support a wide range of features, such as:

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

Uniform Dialing Implementation Requirement:
The architecture must facilitate development and rollout of a uniform dialing plan across the County offices.

Enhanced Automatic Location Information (ALI) Requirement:
The architectural must 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.

Fairfax County VIRGINIA

SECTION 3

INFORMATION TECHNOLOGY PROGRAMS

INFORMATION TECHNOLOGY PROGRAMS

FEATURED IN THIS SECTION

INFORMATION TECHNOLOGY PROGRAMS

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 technological improvement strategy has two key elements. The first element is to provide an adequate infrastructure of basic technology for agencies to use in making quality operational improvements. The second is to redesign existing business processes with technology to achieve large-scale improvements in service quality and achieve administrative efficiencies. 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 2005 Initiatives

In FY 2005, funding of $10,404,823 is included for initiatives that meet the 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 County budget guidelines established for FY 2005, agencies were instructed that project request must meet the following criteria:

- Existing projects (including projects funded prior to FY 2004 with balances carried forward into FY 2004) will require updated progress and expenditure plans.
- Additional funding for existing projects will be considered if the request meets FY 2005 guideline criteria (which will include contractual obligations).
- A firm project completion date must be identified.
- The project must be completed and maintained without additional new staff.

Any request which did not meet these requirements was not recommended for funding. 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 efficiencies and improvement, those that help sustain the performance and reliability of the County technology infrastructure, and those poised to take advantage of needed technological advancements.

In addition, projects were reviewed from both business and technical perspectives. In considering business value, consideration included whether the implementation of the project would benefit service to citizens, the efficiency and effectiveness of County government, 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 business stability, 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 fit with existing County IT infrastructure, and the technical uncertainty pertaining to the commercial availability of solutions, pace of technical change of the proposed solution product industry space, and, the organizational experience with, the proposed hardware, software, and support. In addition, consideration was given to the availability of human resources both in DIT and the sponsoring agency to staff the project.

The established priorities for IT projects for FY 2005 are as follows:

Priority	FY 2005 Adopted Funding
Mandated Requirements	$ 0.3 million
Completion of Prior Investments	$ 2.0 million
Enhanced County Security	$ 1.3 million
Improved Service and Efficiency	$ 4.2 million
Maintaining a Current and Supportable Technology Infrastructure	$ 2.6 million
TOTAL	**$10.4 million**

Mandated Requirements — $0.3 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. For FY 2005, staff will implement a strategy to comply with a Board directive to manage the implementation of proffers. Funding of $188,700 will be used to design 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. 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, $150,000 is included to support the County's telecommuters goal of adding 250 additional telecommuters in FY 2005. 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. Because of the varied hardware and software capabilities of prospective telecommuters, the County offers dial-up modems, Virtual Private Network (VPN) technology, and Citrix servers to meet the various access requirements of remote access and telecommuter users.

Completion of Prior Investments — $2.0 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. Several projects are near completion and will be moved from the development phase to the production phase in FY 2005.

Funding of $812,465 is provided to complete the Sheriff's Information Management System in FY 2005. The Sheriff's Information Management System will provide significantly 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 requirements of the Department of Corrections and State Compensation Board. The completed project will provide new capabilities in ongoing activities including visitor tracking, inmate restrictions and discipline, agency-wide event reporting, inmate referrals, community corrections and courts services. It will eliminate significant data entry redundancies across the present system(s) and support improved information sharing with other criminal justice agencies including the Police Department, Circuit Court, General District Court, Commonwealth's Attorney and other agencies.

Funding of $618,080 will support the Master Address Repository and continuation of the implementation of a GIS application that provides 3-dimensional imagery to the County. This imagery enables agencies, such as the Fire and Rescue Department, Police Department, and Department of Tax Administration, to view County land in a 3-dimensional capacity at their desktop. In addition, this funding is anticipated to complete the development of a centralized, standardized address repository that contains all Fairfax County site addresses. An enterprise database will be designed, constructed and housed for the County; addresses from many

existing databases will be put into this database. The first sets of addresses will be the GIS and LDS database addresses. Another goal of this project will be to maintain the history of addresses. When an address is no longer in use, it will be retired rather than deleted so that it can be referenced at any time in the future. This will provide the ability to see how parcels of land were addressed over time.

Another project scheduled for completion in FY 2005 is the Plans And Waivers System (PAWS) which will eliminate the Plans and Agreements Monitoring System (PAMS) and provide development communities ready access to all land development information available through the County. It will allow a development and all its associated plans to be monitored throughout the process and will provide a comprehensive resource for research and customer access to development information. With funding of $402,674, the completion of the PAWS system will eliminate the need to maintain four separate databases (PAMS, MS Access, MS Excel and PAWS) currently used in performing the bonding activity and implement the Grading Plan component. The elimination of databases will enable the Bond staff of the Environmental and Facilities Inspections Division to administer the bonding process more efficiently and with greater accuracy, significantly enhancing the productivity of staff.

FY 2005 funding of $92,225 is provided to implement Phase II of the Athletic Facilities Scheduling System (AFSS). This system is designed to allow designated sports organization representatives to submit Community Use applications via the Internet; receive notification of their application processing status; view/print their organization's permit on line; submit team rosters; and make payments online with credit cards. Guest users (general public) will have the ability to apply for community use of public athletic facilities online. This project will automate a tedious and cumbersome paper process and reduce the number of forms that need to be completed and submitted for facility use each season.

In addition, funding of $83,304 will complete a phase of the recently replaced Health Management Information System, AVATAR. In FY 2005, the Laboratory Information System will be upgraded, enabling it to interface with AVATAR. This interface with allow users, including many County agencies and healthcare providers, to receive printed lab reports and to access lab data, as well as provide rapid distribution of public health laboratory test data in the event of an emergency.

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 2005, the County will continue to implement a multi-faceted approach to securing County data.

Funding of $1,260,667 is 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. Aimed at ensuring the confidentiality of information in an evolving environment, new technologies will be employed to meet current and future security challenges.

One phase of this project will provide for the design of a modular network infrastructure to enhance and incorporate additional levels of security which will 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. The goal is 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, yet provide the necessary flexibility to meet County business needs.

Another phase supports the implementation of an enterprise security monitoring and audit control process. Such audit controls will protect the integrity and sensitivity of the information contained within the County's technology infrastructure. As a web application, the audit controls solution will enable routine monitoring to be performed at the agency level by information security coordinators. This solution will provide security analysts and managers with advanced tools to proactively build and measure comprehensive security best practices across the County. This phase of the project will increase security monitoring, simplify the management of data, speed reporting and data analysis, and provide critical data for improved auditing and forensic analysis.

The third phase of this project is the continued implementation of Netegrity, a standardized and centralized secure authentication and authorization methodology for web based applications. The Netegrity solution will be used on web based platforms to authenticate users

whenever there is a need to read data which is protected due to business or privacy requirements or modify and/or enter data which could seriously affect the County's business interests. This countywide, standardized access control methodology will provide a solution for not only to improve authorization for employees and internal system users, but also is intended to be expanded to partners, County customers and County residents to authenticate their identity in order to gain access to relevant data and do business in a secure manner.

Improve Service and Efficiency — $4.2 million

There are several projects funded in FY 2005 that provide for additional gains in improved 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 ultimately results in improved results on the provision of direct services.

Funding of $960,256 is provided for 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. There are two separate phases funded in FY 2005 for these initiatives. One initiative will support a countywide electronic Accounts Payable (AP) process including the ability to image documents, use electronic signatures and utilize workflow technologies to replace the use of paper document processing. This project will provide a solution that meets the goal of an all-electronic AP process, integrated with two of the County's corporate enterprise systems: the Financial Accounting and Management Information System (FAMIS); and the accounts payable features of the County and School Procurement System (CASPS), with adaptable technology to meet future requirements.

The other major effort will complete the implementation and on-going support of a document management and imaging system for the Juvenile and Domestic Relations District Court (JDRC). JDRC is in the process of implementing a multi-phase 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 data through the use of imaging, document management, records management, workflow, electronic forms, and enterprise application integration (EAI) tools.

Funding of $1,179,567 is not included in the FY 2005 Adopted budget for Project IT0011, Document Management and Workflow. These funds were allocated in FY 2004 as a result of one-time state revenue received by the Department of Family Services during the fiscal year, which was appropriated for this purpose at the FY 2004 Third Quarter Review. This effort is included in the IT Plan, which includes an initiative from which sensitive Human Services documents can be managed electronically to fulfill case management needs. This effort will improve response times for client inquiries of case records of Department of Family Services (DFS) records in accordance with State and Federal mandates, and avoid non-compliance issues associated with the degradation, damage or loss of paper files; 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.

Funding of $1,704,455 will support the Fairfax Inspections Database Online (FIDO) project, replacing the legacy Inspection System Information Systems (ISIS) mainframe system in the Office of Building Code Services and multiple stand alone databases in other agencies, and providing 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 will enable data sharing between

agencies and enhances one-stop-shopping for the customer. Efforts in FY 2005 will focus on completing the replacement of outdated systems and databases in Department of Public Works and Environmental Services (DPWES), the Fire and Rescue Department (FRD), the Department of Planning and Zoning (DPZ) and the Health Department.

Funding of $540,600 provides for tactical initiatives which focus on immediate improvements to information technology functions performed in a limited capacity across the County. One such effort is the expansion of an automated correspondence tracking product, Intranet Quorum (IQ), used to capture communications, track contacts, events, and complaints. This product has been successfully implemented in several County agencies and provides an integrated approach to delivering services to citizens and staff, giving 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. Another effort will provide the ability to upgrade the technical capabilities of County call centers. In FY 2005 funding will procure and implement tools to address immediate technology needs for the Human Services Consolidated Service Planning (CSP) call center. The acquisition of new call center technology will move the County towards an open architecture, providing an opportunity for sharing critical information across multiple County call centers.

Funding of $500,000 will continue integration of e-government architectures (IVR, Kiosk, Web, Info Web, Wireless) in order to enhance the delivery of information and services, and provide new information and services to constituents. The 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.

Through a cooperative effort of the three Fairfax Courts (Circuit Court, General District Court, Juvenile and Domestic Relations District Court), the Department of Public Works and Environmental Services (DPWES) and the Department of Information (DIT), FY 2005 funding of $250,000 will support the development of a mock courtroom to use as a prototype for future courthouse expansion and renovations to determine and assess future courtroom technology needs and requirements.

Funding of $100,000 will provide up-to-date technology to allow Fairfax County Conference Center customers in the larger conference rooms to fully engage in collaborative events. This project removes technical roadblocks to effective and efficient group discussions by adding technology and streamlining the room preparation process. Audio and visual equipment will be accessible, available and ready to use without staff set up time. Customers will no longer need to provide their own equipment, or endure wait time while equipment is found and set up for them. These enhancements will improve the quality of service for employees and citizens who require special accommodation in the Conference Center and bring County facilities into compliance with ADA requirements in those areas.

Funding of $70,000 is provided to automate the Police Property Section, which is responsible for the cataloging, storage and security of all evidence collected by the Police Department. Evidence must be available for analysis, trial and, in accordance with legal requirements, disposal. The Police Evidence Section uses a combination of an index card tracking system developed over 30 years ago and the property record fields of the Police Records Management System to maintain an inventory of 44,000 pieces of evidence. This project is proposed to implement a barcode labeling system and database to track all pieces of evidence.

Maintain a Current and Supportable Technology — $2.6 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 2005 which supports 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.

FY 2005 funding of $792,250 will provide for the replacement of the Facility Management Division's (FMD) existing Maintenance Management (Work Order) System and integrate it with other existing components of the FMD information system in order to provide a single, integrated facilities information resource for FMD, their customers, and other "partner" owners and users of facilities information. The goal of this project is to implement an application that will increase the effectiveness and efficiency of staff and the utilization of capital resources required to maintain and manage the County's facilities and properties. An updated system will accomplish this 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.

Funding of $607,400 will support a countywide migration to the Windows 2003 Server Operating System, as the County's standard operating system for the enterprise LAN server infrastructure. Windows 2003 Server 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.

Funding of $600,000 will support the modernization of telecommunications infrastructure which will integrate voice, video and data communications onto a common structure. The 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 $449,930 is provided to continue the upgrade of the Public Service Radio System. This on-going project replaces 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 FY 2005 project cost is estimated at $4,644,762 which includes both infrastructure costs and, based on a staggered implementation schedule, the purchase of the remaining half of the required radios. 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, $4,194,832 will be recovered from Non-General Fund Supported agencies, the Fairfax County Public Schools, and the Fairfax County Water Authority in FY 2005.

FY 2005 funding of $221,817 has been included to provide for information technology training 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

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:

- Mandated Requirements
- Leveraging of Prior Investments
- Enhancing County Security
- Improving Service Quality and Efficiency
- Maintaining Technology Infrastructure

In FY 2005, funding of $10.4 million is included for initiatives that meet 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 chart on page 8 provides a summary of the IT Project Fund 104 and Fund 120 modernization dollars since FY 2001. 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.

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 2004, 40 requests totaling over $27.6 million were submitted for consideration for Fund 104. Of this amount, 24 projects totaling $10.4 million are recommended to be funded. This is a slight increase from the downward trend over the past 3 years in IT investment funds as well as additional budget reductions mandated by the County Executive in past years. Public Safety initiatives totaling $6.7 million are also recommended in Fund 120 (E-911).

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).

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 2005.

INFORMATION TECHNOLOGY PLAN

PROJECT FISCAL HISTORY — FY 2001 through FY 2005

Budget ID Number	Project Title	FY 2001 Adopted	FY 2002 Adopted	FY 2003 Adopted	FY 2004 Adopted	FY 2004 Revised	FY 2005 Adopted
FUND 104		(000's)	(000's)	(000's)	(000's)		
IT0002	Human Services Information Systems	1,500	448	186	493	1,115,433	92,225
IT0003	Planning & Development Business Process Redesign	2,102	0	1,291	2,230	2,418,628	402,674
IT0004	Geographic Information System (GIS)	719	393	230	328	1,095,276	618,080
IT0006	Tax / Revenue Administration	1,351	0	100	1,155	2,987,583	0
IT0008	Library Projects	1,522	0	0	0	620,688	0
IT0010	Information Technology Training	400	400	250	300	335,531	221,817
IT0011	Document Management and Imaging	248	400	450	0	2,020,741	960,256
IT0015	Health Management Information System (HMIS)	250	0	191	319	635,629	83,304
IT0020	Land Records Automated System (LRAS)	872	2,740	886	0	2,452,417	0
IT0021	Network Modernization	800	0	0	0	7,512	0
IT0022	Tactical Initiatives	393	397	160	208	664,280	540,600
IT0023	Electronic Data Exchange	0	0	0	0	71,961	0
IT0024	Public Access Technologies / E government	1,150	939	1,702	1,110	3,815,974	500,000
IT0025	Adult Detention Center Information System	93	0	0	0	701,956	812,465
IT0031	MS Office Suite Migration	2,334	1,668	0	0	108,676	607,400
IT0036	Systems Management	151	0	0	0	0	0
IT0037	ISIS / PAMS Handheld Computers	150	0	0	0	0	0
IT0039	Court Modernization Projects	250	0	0	0	686,398	0
IT0040	Performance Measurement Database	175	0	0	0	0	0
IT0041	Program Conversions and Replacements	922	240	0	0	528,466	0
IT0042	FASTRAN Scheduling System	341	0	0	0	98,150	0
IT0043	Human Resources Information System	1,925	0	0	0	571,792	0
IT0044	Telecommunications Study	800	0	0	0		0
IT0045	Enterprise Technology Center Modernization	1,100	1,612	0	0	52,486	0
IT0046	Server Replacement	150	150	0	0	2,171	0
IT0047	Upgrade Commodity/Service Codes	84	0	0	0	83,498	0
IT0048	Incident Reporting and Training System	252	150	359	50	554,099	0
IT0050	Public Service Communications Replacement	0	937	1,580	2,552	6,027,064	449,930
IT0051	Fleet Management System	0	500	0	0	44,480	0
IT0052	Fire Prevention Services Database	0	427	0	0	0	0
IT0053	Telework Expansion	0	270	0	30	40,225	0
IT0054	SYNAPS	0	604	0	0	197,863	0
IT0055	Fairfax Inspections Database Online (ISIS)	0	2,455	88	874	3,296,547	1,704,455
IT0056	Pilot Courtroom Technologies	0	105	0	0	66,913	250,000
IT0057	Community Policing / Technology	0	0	400	0	42,145	0
IT0058	Remote Access	0	0	250	0	46,426	150,000
IT0059	Child Care Technology Systems	0	0	0	0	700,000	0
IT0060	Telecommunications Modernization	0	0	0	0	0	600,000
IT0061	Information Technology Security	0	0	0	0	0	1,260,667
IT0062	Evidence Tracking System	0	0	0	0	0	70,000
IT0063	Facility Space Modernization	0	0	0	0	0	100,000
IT0064	Proffer Database & Status System	0	0	0	0	0	188,700
IT0065	Facility Maintenance Management System	0	0	0	0	0	792,250
	TOTAL FUND 104	**$20,034**	**$14,835**	**$8,123**	**$9,649**	**$32,091,008**	**$10,404,823**
FUND 120							
IT0001*	Public Safety Communications Network	5,306	6,084	5,035	6,714	6,698,933	6,698,934
	TOTAL FUND 120	**$5,306**	**$6,084**	**$5,035**	**$6,714**	**$6,698,933**	**$6,698,934**
	GRAND TOTAL: INFORMATION TECHNOLOGY PROJECTS	**$25,340**	**$20,919**	**$13,158**	**$16,363**	**$38,789,941**	**$17,103,757**

**IT0001 Public Safety Communications Network was moved from Information Technology Projects Fund 104 to E-911 Fund 120 in FY 2001.*
Funding for this project is provided from E-911 fees.

3.2.1 PUBLIC SAFETY

IT0001.6 CAD SYSTEM ENHANCEMENTS

Project Description

Enhancements to existing CAD applications that allows revised or additional functionality for the CAD System users. System enhancement 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. The specific work to be performed is defined by the change being performed and can only be specified once a change is identified.

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 $20,000 is required in FY 2005 for CAD System enhancements.

Project Goals

Northrop Grumman, Public Sector Inc. of Reston, Virginia provides maintenance on 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. Additional software applications and hardware devices required to meet the operational requirements of public safety agencies are not provided for under these 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 upgrade is now in production. On-going system 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 Staffing and Budget

Staff to perform work for software enhancements to the CAD system is dependent upon the actual enhancement requested. For the most part staffing will be limited to the software vendor, Northrop Grumman, Public Sector Inc. and the CAD System Manager at the PSCC. Occasionally, some staffing hours by County DIT personnel may be required for technical review, communications engineering and interface with other county systems. FY 2005 funding of $20,000 is set aside to plan for unanticipated enhancements to the CAD system due to legislative mandates, interoperability requirements, and the necessary replacement for additional hardware needs.

Return on Investment

The modifications made to the CAD system through software enhancements provide the end user with a functional system that meets the needs of the user throughout the lifecycle of the CAD system applications. 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. Funding of this project will ensure that all operational needs are met providing the end user will all tools required to perform job tasks in the timeliest fashion available.

IT0001.7 CAD IN-VEHICLE MOBILE FIELD REPORTING AND TRANSPORT

Project Description

This project started in FY 2001, provides capability for police officers to compose and transport to the Police Records Management System (PRMS) a variety of reports that are currently completed by hand. The reports to be completed in this fashion are the Police Investigation and the Police Accident Reports. The new Mobile Computer Terminals (MCTs) implemented as part of the CAD MDCS project were procured in part as a prerequisite for this new field application aimed at improving police productivity. The reports to be composed and transported via the MCTs and the

MDCS infrastructure are currently completed manually by responding police officers after dispatch to an event or accident and after the initial investigation by the officer. They not only contain some of the same information currently collected via the CAD system, they also include extensive information and narrative about the scene of the event/accident, the findings of the officer, and persons and property information relative to the event.

This information is the essence of professional police work and provides the basis for criminal investigation, prosecution, crime analysis, traffic analysis, crime statistic, insurance claims and a host of other more specific purposes. Approximately 165,000 reports are completed each year consuming nearly 121,000 hours of officer time — and more than a significant portion of any individual police officers time.

Project Goals

The goal of this project is to reduce the amount of time police officers spend completing investigative/accident reports and improve the speed and accuracy of information collected via the report writing process. The old process for report writing and transport to the Police Records Management system was a cumbersome, time intensive, and places extremely heavy demands on clerical staff tasked with reviewing, editing, and entering data from the reports. Access to data from investigative reports was severely delayed due to the resource intensive nature of the manual process. The new MCTs will reduce the time it takes for the police officer to complete their reports, and significantly reduce and reallocate the time and effort necessary to make data available to the myriad of users with the Police Department. This technology/business improvement goal was a key finding of the County sponsored KPMG organizational study initiated by the Board, which recommended it as a means of improving police productivity and improving timely access to critical data.

Progress to Date

This project has two phases. Phase 1 which started in 2001, was for design and development of an implementation plan of the project which is complete. Phase 2 of the project provides for purchase of the system and hardware components, installation and implementation of the new system; installation of the devices is currently underway with the initial pilot of the project scheduled to be completed in the spring of 2004. Full implementation and completion of this project is targeted for July, 2004.

Milestones

- *Phase 2 begins, April 2003*
- *Hardware Acquisition and Installation, March 2004*
- *Software Installation and Testing, April 2004*
- *Training, May 2004*
- *Reliability and Functional Testing, May 2004*
- *Acceptance, July 2004*

Project Staffing and Budget

FY 2002 funding in the amount of $377,500 in addition to $100,000 previously appropriated provides the necessary funding to match an $802,500 Federal grant for this project. Additional funding for this project has been requested through Federal grants. No additional FY 2005 IT funding is required for this project.

Return on Investment

With the advent of the new MCTs being installed in police vehicles, the Police Department is now in the position technically to replace its current method of investigative and accident reporting with a more efficient process. Enabling police officers to prepare their investigative and accident reports in their vehicles would capitalize on applying the information about any event collected via CAD from receipt of the call from a citizen until the officer leaves the scene, eliminating the need for officers to re-record this information in a written report. The implementation of this type of CAD subsystem would eliminate a substantial amount of redundancy and inefficiency characteristic of the current process of reporting. Police officer productivity would increase because less time will be spent re-recording data already captured in the CAD system and because of the functionality and editing features in typical reporting software. Collected information would be more accurate due to automated edits and verification features contained in the reporting software. Record division personnel would be more productive because their focus would change from data entry to quality control. More time could be diverted to other records management tasks now neglected due to the concentration on data entry. Access to investigative information on a timely basis will be substantially improved.

IT0001.11 REPLACEMENT OF THE VOICE LOGGING RECORDER SYSTEM

Project Description

This on-going project which was approved in FY 2003 replaces the Public Safety Communications Center's 911 call taker and voice radio communications recording system, a PC-based system that employs tape media for recordings, records all activity at the Public Safety Communications Center (PSCC) including incoming calls for service and radio communications between the PSCC and field units with new, more reliable technology.

Project Goals

This project replaces the nine year old, outdated voice logging equipment that will no longer be supported by the vendor without significant increases in maintenance fees. Maintenance fees will be more costly than replacement. Voice data storage will be updated with newer, more efficient optical disk storage rather than magnetic data tape and magnetic media that can only be reused a maximum of five cycles before having to be discarded as unreliable for data recordings. The new system will provide improved search and retrieval capabilities and reliable data storage using disk media instead of tape media.

Progress to Date

This project is a FY 2003 request that will be acquire and implemented during FY 2003 and FY 2004. Funding of $400,000 was appropriated in FY 2003 for this replacement. This project should complete early in FY 2005 with no new funding required.

Milestones

- *Formal Proposal for new System, January 2003*
- *Contract Execution & System Procurement April - June 2004*
- *Software Installation and Testing, June 2004*
- *Training, June 2004*
- *Reliability and Functional Testing, July 2004*
- *Acceptance, July 2004*

Project Staffing and Budget

The selected vendor is responsible for a turnkey solution for this project. Maintenance for the selected system will be included in the CAD maintenance contract after the system is selected and out of warranty.

Funding for this project in the amount of $400,000 in FY 2003 provides for the purchase, integration and installation of this system.

Return on Investment

A significant reduction in time searching tapes for voice recordings will be immediately realized. Tapes often contain several days' work of data. The data is indexed but getting to the place on the tape where the recording actually is involves searching through the tape to reach the point where the recording is. Tape searches are very time intensive. Disk search using a pointer system on the disk will take you directly to that point on the disk. Significant time-savings are realized. Disk storage provides improved data storage as the media has far fewer failures than tape media and disks can be backed up for another level in recording integrity. Disks can be reused regularly with little wear and tear. Tapes can only be used a maximum of five times before they must be discarded. A reduction in maintenance fees for voice recording equipment should also be realized. The current maintenance fees for the older technology will increase dramatically in the next year or two due, assuming support can be provided.

IT0001.12 PUBLIC SAFETY COMMUNICATIONS CENTER TRAINING FACILITY

Project Description

This project creates an onsite functional training facility to accommodate a host of training initiatives for the Public Safety Communications Center. The training facility will significantly enhance new employee training, new skills training and refresher training by providing a formal training and testing facility onsite. The EMD program mandated by the Board of Supervisors will require extensive training and certification of personnel. An appropriate facility is needed to accomplish this. The facility also provides an overflow work site for extreme high volume activity and other emergency activations in the PSCC. Each of the training workstations would be capable of answering live calls and entering events into the live CAD system on an ad-hoc basis should circumstances dictate activation of an additional telephone bank for extreme circumstances. While the training workstations/facility would not be appropriate for full time call taking, they would prove to be invaluable in those periodic situations where an alternate phone bank is required.

Project Goals

The technology goals for this project are to provide a training facility equipped with all of the technology currently in use in the Public Safety Communications Center facility. This project provides for the purchase and installation of furniture and equipment utilized by the PSCC to be set up as a training room so that new employee and ongoing training for PSCC personnel can be facilitated in a classroom setting with "hands on" capability. The primary users of the facility will be the PSCC call takers, dispatchers and trainers. Transition training, new employee training, new skills training and refresher training all would be performed using this facility. Additionally, testing and development of the CAD software redesign and other upgrades to PSCC CAD operations will be done using this facility. All Police and Fire and Rescue Department employees also can be trained here on the use of new applications and technologies.

Milestones

- *Initiate contracts and purchase orders, June 2004*
- *Equipment shipped and staged for installation, August 2004*
- *Equipment installed with necessary wiring; system integration, September 2004*
- *Testing of equipment; begin use of new facility, September 2004*

Progress to Date

This project is a FY 2003 request that will be purchased, integrated and installed by September, 2004.

Project Staffing and Budget

Funding in the amount of $120,000 in FY 2003 was approved for this project to include the purchase and installation of CAD equipment, radio console workstations, telephone workstations, training aids and other furnishings required in a contemporary classroom. Onsite vendor and County staff will perform integration and installation of the equipment into existing systems.

Return on Investment

Proper training of PSCC employees ensures efficient processing of calls for service. Not only would call processing times be reduced, but also this project will reduce the one-on-one training time provided in actual operations. One-on-one training is very labor and time intensive. The mandated training requirements that come with the replacement of the telephone and CAD systems and formal Emergency Medical Dispatch program necessitate the expansion of the PSCC training capabilities.

The quality of information obtained from callers and provided in CAD events to responding field personnel will be significantly improved through intensive hands-on training. Appropriate event coding and resource response will be enhanced through the additional training and practice not currently available. If left to train with current facilities, the opportunity will not exist to properly demonstrate and have students' perform/practice using the installed systems. Improved training capabilities will return improved customer service to the public as call processing time's decrease and employees learn how to maximize the information available to them in Altaris CAD.

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 5 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 FY 2004 (based on the five-year lifecycle for public safety portable radios) and an additional 500 mobile digital radios beginning in FY 2007 (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 FY 2004.

Milestones

This will be a recurring annual life-cycle replacement of a portion of the County's public safety subscriber radio units. It is estimated that the procurement, delivery, programming, and deployment of replacement radios will occur in the first six months of each fiscal year.

Project Staffing and 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, and with the determination and update of agency-specific Function Code Plugs. 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 FY 2005 Project cost is estimated at $1,919,085 to purchase 500 replacement Public Safety portable 800MHz digital radios.

Return on Investment

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 (MCTs) installed in police, fire and rescue, and selected sheriff unit vehicles has a life expectancy of no more than 5 years effective use. This project provides for the incremental replacement of the MCTs 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 5 years, replacing 20% of the fleet per year for 5 years. The first year replacement cycle was budgeted and funded in FY 2003 as part of the initial MDCS project and provided for the replacement MCTs for the first 20% of the mobile fleet. Second year funding in the amount of $2,215,000 was approved in FY 2004. Third year funding for the MCT Lifecycle replacement will be required in FY 2005 in the amount of $2,215,000.

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 5 years. Additionally, the average technology refresh standard for business

use occurs every 3 to 4 years and therefore, a 5 year replacement cycle exceeds the industry standard. Effective use of mobile equipment beyond 5 years cannot be expected. Maintenance fees for older equipment will escalate during the 3 to 5 year lifecycle of the MDTs and beyond 5 years maintenance for these units may not be obtainable.

Milestones

- *Initiate contracts and purchase orders, July 2004*
- *Equipment shipped and staged for installation, September 2004*
- *Equipment installed with necessary wiring; system integration, December 2004*
- *Testing of equipment; begin use of new equipment, December 2004*

Progress to Date

This project is a FY 2005 request that will be purchased, integrated and installed during FY 2005.

Project Staffing and Budget

Funding in the amount of $2,215,000 is required for this project to include 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.

Return on Investment

The average technology refresh standard for business use occurs every 3 to 4 years and therefore, a 5 year replacement cycle exceeds the industry standard. Effective use of mobile equipment beyond 5 years cannot be expected. Maintenance fees for older equipment will escalate during the 3 to 5 year lifecycle of the MCTs. Beyond 5 years, maintenance for these units may not be obtainable or if it is will be very costly to obtain. Historically, spare parts for MCT equipment older than 5 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.

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, photo-copying, 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 20,000,000 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, facilitate 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.

Phases 2 and 3 were successfully implemented in FY 2000. Phase 2 added the capability for Circuit Court personnel to scan, index, and store for retrieval, all land record documents from day forward. 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.

Phase 4 was successfully implemented in FY 2001 and affords Land Records staff the ability to improve productivity, to improve 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. Some 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 2002, an electronic filing prototype involving the transfer of certificates of satisfaction and the 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 50 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 and now we have 10 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 in 2004 that will process all document types at a lower cost to the customer. With the development of this system it is possible that 40% of all land recordings will be filed electronically within a 5 year period.

Milestones

- *Providing added service to citizens, title companies, law firms and other organizations, a credit card processing feature will be integrated into the CARS system in Land Records and Public Services.*
- *Incorporating Judgments and Public Services into the CARS cashiering system, which will eliminate the need to store paper receipts for the mandated three-year period by providing storage in the database. This milestone will replace manual cashiering and ease the workload of the comptroller.*
- *Adding public and staff retrieval workstations and equipment improves the ability to capture and retrieve information and reduce the strain on current technology from 24/7 usage.*

- *Continuing the electronic filing initiative permits 24/7 filing of documents in Land Records. This milestone will reduce wait times for customers and lighten the staff load of documents recorded over-the-counter. This initiative will increase the number of documents that are accepted electronically. Six document types represent approximately 90% of the workload and will permit staff to more efficiently meet the overall needs of the law and the public.*
- *Replacing out-of-date technology with newer servers that can handle additional load with appropriate storage capability and 24/7 retrieval demands.*
- *The retrieval system has experienced tremendous growth since its implementation and is being used Countywide and nationwide. Among the County agencies using the system are: Commonwealth Attorney, Department of Information and Technology, Department of Tax Administration, Department of Public Works and Environmental Services, Fairfax County Department of Transportation, Department of Planning and Zoning, Park Authority, Water Authority, Facilities Management, GIS and Mapping, Police Department, Office of Finance, General District Court, City of Fairfax and Hunter Mill District Supervisor's Office. Nationally the retrieval system has customers from Idaho, Pennsylvania, Michigan, Maryland, Illinois, California, North Carolina, Nebraska, Texas, South Carolina, Florida, Washington D.C., and throughout the Commonwealth of Virginia.*

Project Staffing and Budget

Circuit Court staff:
- System Administrator
- Technical Support Staff
- Business Team Leader
- Land Record's Manager

Department of Information Technology staff as needed:
- Oracle Database support
- AIX Support
- Network Management support

Contractor/consultant staff:
- System Development/Training/Post Implementation Support
- System Operation and Maintenance

FY 2003 budget for contractual and post Implementation support is $885,900. FY 2004 budget, which is

comprised of Technology Trust Funds received from the State Compensation Board for project support, totals $436,398.24. This project continues into FY 2005.

Return on Investment

Funding this project will:

- *Enhance the retrieval and administration of Circuit Court records*
- *Improve operational efficiency and customer service with servers designed to increase speed of capture and retrieval of information*
- *Upgrade the technology infrastructure by providing additional needed storage for an increase in data capture;*
- *Provide enhanced customer service by providing debit and credit card processing;*
- *Meet customer access requirements to information and services by increasing the number of staff and public workstations;*
- *Increase staff efficiencies of multiple departments (Land Records, Public Services, and Auditing) by providing a single cashiering system sharing one database;*
- *Save time, money, and staff resources by providing electronic filing of approximately 30,000 documents per year in the short term, with the potential to rise to near 65,000 documents within the year. Ultimately over 200,000 might be electronically filed;*
- *Improves security and integrity of process;*
- *Reduce the amount of floor space required to maintain paper documents such as receipts;*
- *Increase revenue expected from subscribers of the enhanced Court Public Access Network (CPAN).*

IT0025 ADULT DETENTION CENTER INFORMATION SYSTEM

Project Description

The goal of this project is replacement of the Adult Detention Center Information System (ADCIS) with a modern and more comprehensive system for information needs in the Sheriff's Office. The replacement will provide improved functionality in all administrative areas, including bookkeeping, prisoner classification, and compliance with the Department of Corrections and State Compensation Board. It will provide new capabilities in areas including visitor tracking, inmate records, medical services, 108 reporting, and referrals. The new system will provide for improved information sharing with other criminal justice agencies including, the Police Department, the Circuit and General District Courts, the Commonwealth's Attorney, the Justice Department and other agencies.

Project Goals

There are three broad technology goals for this project. The first goal is to integrate the positive identification components of digital LiveScan fingerprinting and digital photographs into the new system. Second, the project will upgrade current VSAM files to a database platform with improved technologies and capabilities. The third goal is to tightly integrate the modules serving the major functional divisions in the Office of the Sheriff and thereby provides comprehensive information on inmates and events. 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. The County Department of Information Technology is undertaking this project as an in-house development effort.

Progress to Date

Requirement analysis was completed in November 2000 and release of the Request for Proposals occurred in January, 2001. A pre-bid conference was held in February, 2001, and was attended by approximately 30 vendors. Six proposals were received from these vendors in March, 2001. Both a Selection Advisory Committee and Technical Advisory Committees reviewed the six proposals received. In July 2001, the procurement was withdrawn as a result of the decision to undertake the project as an in-house development effort. An in-house effort was necessary due to the extensive customization needs evident from the RFP review and due to the insufficiency of funds to procure and customize the software by the leading vendor. Between August and December 2001 technical staff continued working on the architecture issues, completed one module and began upgrades to a second module. During 2002 and the beginning of 2003, requirements were more closely defined. In the Spring and Summer of 2003 Phase 2A of SIMS, the Administrative Maintenance Tool for SIMS, was designed and programmed and then in October of 2003 this phase was put into production. Detailed design for the core application (Phase 2B) is underway and programming will begin in February 2004.

Milestones

- *Complete Sheriff Inmate Program module (part of Phase I, February 2002*
- *Complete Risk Analysis and Proof of Concept for architecture alternatives, April 2002*
- *Complete modernization of Sheriff Services System (part of Phase I), June 2002*
- *Begin Requirements Documentation for Booking, Inmate Records, Classification and Confinement, March 2002*
- *Design and code SIMS Administrative Tool (Phase 2), May 2003*
- *Implement SIMS Phase 2A, October 2003*
- *Complete Requirements Documentation for Booking, Inmate Records, Classification and Confinement, July 2003*
- *Data Identification and conversion planning, August 2003 to February 2004*
- *Migration programming, February 2004 - March 2004*
- *Design and code SIMS core module (Phase 2B), February 2004 - May 2004*
- *Test and Train, June - August 2004*
- *Implement Core SIMS (Phase 2B)I modules in Production, September 2004*
- *Complete requirements confirmation process for Phase III, January 2005*
- *Program Phase III, February to June 2005*
- *Test and Train Phase III, July-September 2005*
- *Implement Phase III, December 2005*
- *Post-Implementation assessment, February 2006*
- *Post-Implementation Phase Design and Enhancement, March - September 2006*

Project Staffing and Budget

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

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 new system will enable sharing of appropriate information via web technologies and will consolidate inmate information from a variety of databases into a single, integrated source for inmate information. The benefits cannot be obtained with the current technologies and applications in place. The integrated system will:

- Eliminate data entry redundancies existing between organizational units within the jail and other agencies in the criminal justice system;
- Increase and enhance access to data as a result of more current platforms using more current technologies;
- Provide public access to data in appropriate cases such as on-line inmate inquiry, thereby eliminating significant call-taking responsibility by booking deputies and enabling customers direct access to data;
- Improve inmate identity verification with access to digital photos in the jail management system, thereby mitigating potential release of an inmate who attempts to assume the identity of another;
- Improve access to information for decision-making via robust query tools;
- 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.

This project, along with the Sheriff's Imaging Project also funded in FY 2002, will enable the Office of the Sheriff to leverage information resources in valuable and timesaving ways throughout the agency.

IT0039 COURT MODERNIZATION

Project Description

The operational objectives of the Court Modernization Project include modernization and optimization of the overall Circuit Court case management environment through the use of the FullCourt COTS case management system. The case management software includes comprehensive financial management with eventual additions of workflow and imaging, electronic filing and web access modules and interfaces to further enhance Fairfax County Circuit Court Clerk's Office case management capabilities. The files for the approximately 22,000 cases commenced in the Circuit Court each year may contain a few pages to a multitude of pages. Case administration involves not only the physical files, but also scheduling, calendaring, event recordation, evidence tracking and financial management which include collection and disbursement of fees, fines and restitution.

It is imperative that the Circuit Court implements an improved court case management system with adequate financial management in accordance with recommendations from the 2001, 2002 and 2003 audits conducted by the Office of the State Auditor of Public Accounts. According to these audit reports, our current mainframe-based case management system falls far below minimum requirements of the Office of the State Auditor of Public Accounts for financial tracking and management.

Another significant incentive for accelerated implementation of an improved case management system for the entire Circuit Court is the multi-year Courthouse expansion project which started in late FY 2001. Parking at or near the Courthouse will continue to be severely limited during this multi-year project. Expanded use of the FullCourt court case management system software will permit the Fairfax County Circuit Court Clerk's Office to more quickly provide improved and alternative ways to receive and share critical case management information through realization of imaging, electronic filing and enhanced remote access.

FullCourt case management system software will make additional data elements and formats available to satisfy the increasing requirement for comprehensive information from judges, administrators, the Virginia Supreme Court, county and state agencies. Due to system limitations, the Court's current legacy case management systems are unable to provide these

expanding informational requirements. The FullCourt case management system will eliminate the need for frequent retrieval of physical case files to obtain routine information. Imaging will further allow these individual case files to be viewed by multiple users in different locations simultaneously. Currently, a case file being reviewed by a Judge or processed by staff is unavailable for public review impeding constituent services.

Project Goals

Use of imaging and e-filing with availability of workflow, adequate interfaces and web access will greatly enhance the Court's ability to provide appropriate public and in-house access to critical court information. When documents are electronically filed or imaged they will be available for simultaneous processing and review by multiple users for quicker and improved service to in-house, County and State agencies and public users.

FullCourt's Oracle database functionality permits added data elements and simplifies retrieval of information for users. Functions such as the ability to set ticklers and flags to remind Court employees of deadlines or specific problems with a case are crucial for successful case management. Enhanced report preparation capabilities, comprehensive financial management, expanded online information available to multiple users, and customizable tables that can be maintained by Fairfax County Circuit Court staff also make the FullCourt Court case management system more flexible and robust than the current legacy systems.

Progress to Date

The project was delayed during FY 2002 in anticipation of putting out an RFP seeking a new COTS case management system. However, late in FY 2002, 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 has been purchased. Initial modifications have begun and it is anticipated that staff training and implementation will be completed early in FY 2005.

Milestones

- *Procure FullCourt Version 4.0 site license, March to June 2003*
- *Software installation, modification, testing and acceptance, December 2003 to June 2004*
- *Training and implementation, May to August 2004*
- *Further development of needed interfaces and imaging, July 2004 - December 2004*
- *Modification, testing, acceptance and implementation of interfaces and imaging, September 2004 - March 2005*
- *Initial hardware delivery and installation, March - August 2004*
- *Imaging hardware delivery and installation, September 2004 - March 2005*

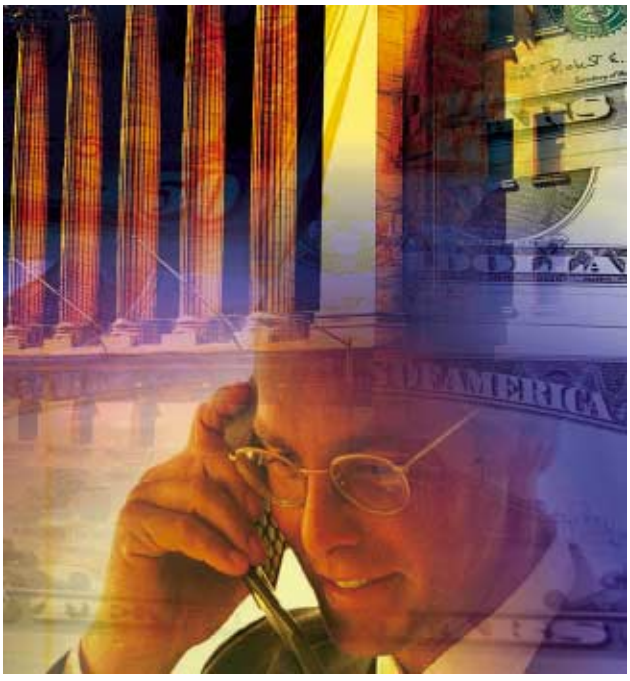
Project Staffing and Budget

Carryover funds in FY 2004 of $250,000 and agency funds of $420,000 appropriated during FY 2003 third quarter review have been utilized or encumbered for purchase of the site license, initial modifications, training and implementation support. This project is expected to be completed over the next three to four years. The total project cost over the next three fiscal years is estimated to be $3,848,839. FY 2004 costs are projected to be approximately $796,839 with expected follow-up expenditures of $1,741,000 and $1,311,000 during FY 2005 and FY 2006, respectively.

Return on Investment

Cost Savings/Quantifiable Benefits:

- Reduction and elimination of regular and overtime staff hours required for duplicate data entry and verification upon implementation of FullCourt case management system for the entire Court.



- Estimated 30% reductions in staff file retrieval time because of the increased information obtainable online. An even higher reduction of 70% or more will occur when imaging, electronic filing and web access are enabled because case file documents can be viewed simultaneously online by multiple users.
- Reduction in data entry requirements for cases filed electronically. Initial case information will be entered into the case management system automatically by the electronic filing module. Staff will continue verification processes.

Cost Avoidance:

- Use of FullCourt case management system will avoid extensive contractor/consultant or in-house development time and costs required for a new or enhanced case management system.
- Reduction and eventual elimination of most DIT requirements for maintenance and modification of the current civil and criminal mainframe systems and FINCASH. The FullCourt user-defined table-driven system software will allow significant Circuit Court IT staff control.
- Court-wide use of a single case management system will eliminate the need for duplicate data entry by DCTP staff and others avoiding overtime hours.
- Elimination of extra system software training required for staff moving between civil and criminal sections. In addition, extensive user help will be available online.
- Storage space, records management requirements, and file duplication costs will be reduced as case documents are imaged, filed and shared electronically.
- More efficient use of staff time will result from workflow functionality. Also, the increased availability of online database information will result in a decreased need to physically retrieve file folders to obtain information for process or review.

Enhanced Revenue:

- More comprehensive financial tracking in FullCourt case management system will allow prompt action on overdue criminal payments.
- Flags and timed reminders will assure timely notifications and fewer missed case notations.
- Availability of enhanced CPAN information for remote access users should result in increased subscriber base to include more civil practitioners.

IT0048 INCIDENT REPORTING AND TRAINING RECORDS

Project Description

This project is part of several phases over a multi-year period to replace and enhance the records management system that will capture field fire and emergency medical service (EMS) incident and training data. Phase I and II of the web-based client/server was funded in FY 2001. These two phases provided the foundation for system development for creating, updating, deleting, retrieving and storing incident and training records. In addition, it provided the capability for the County's Computer Aided Dispatch (CAD) system (911) to interface with the new incident system. The replacement of the incident reporting and training systems was necessary to comply with:

1. The new National Fire Prevention Association (NFPA) coding requirements within the National Fire Incident Reporting System (NFIRS 5).
2. The Commonwealth of Virginia Office of Emergency Medical Services (OEMS) mandated emergency medical services (EMS) data reporting requirements.
3. Minimum standards set by Virginia Department of Fire Programs for agency accreditation and certification under the Virginia/National Professional Qualifications System.

The major goal of Phase III, scheduled for FY 2005, is to integrate hand-held mobile computers (mobile clients) into the EMS patient care reporting process. This will allow for the achievement of many agency objectives. By having a single point of entry for EMS incident information, data reliability and validity are enhanced, legal liability is reduced, staff time spent archiving and retrieving reports to accommodate state archive requirements and FOIA requests is lessened, and time spent in completing duplicative reports is eliminated. In addition to supporting OEMS data reporting requirements, federal Health Insurance Portability and Accountability Act (HIPAA) standards regarding security and privacy in the transmission and storage of patient health information are also addressed by this technology. These factors serve to enhance the continuum of patient care for the citizens and guests of Fairfax County, as well as improve the quality of management and policy decisions within the Fire & Rescue Department (FRD). Finally, mobile clients will be used to manage potential/real EMS incidents that can result from a terrorist attack including:

- Effectively tracking multiple patients through several stages of triage, treatment and transportation.
- Coordinate with public health officials in the detection and identification of disease outbreaks.
- Link to other databases operating within northern Virginia hospitals for bed-tracking.
- Access approved treatment protocols for exposures to Biological and/or Chemical Warfare Agents.

Project Goals

A new system will take advantage of the Web technology and be expandable to meet the changing needs of the department. The project will consist of the acquisition of a Web-based client/server COTS application (NFIRS and Training) and a customized EMS application all integrated into the same database. This system also will have the capability to interface with the County CAD system, Fire and Rescue's Telestaffing system, and GIS tools such as ArcView. Capturing patient data in the field with mobile clients allows data to be more accurate and centralized in a database. In future years, as wireless technologies become a more secure form of electronic transmission, this system can easily be modified for direct connectivity from anywhere for direct sharing of data.

Progress to Date

Phases I and II of the project was started in FY 2002. Additional EMS state requirements were identified in FY 2003 and added to the customization of the application. The project was delayed during FY 2003 and is subsequently back on track with a new project schedule as outlined under the project Milestones.

Phase III is underway with a preliminary evaluation of available mobile client hardware and software. Funding for this phase will be carried over into FY 2005.

Milestones

- *Completion of Phase I & II, June 2004*
- *Develop system requirements and RFP data require-ments, July 2004 to September 2004*
- *RFP submittal, response, evaluation and demos and award, October 2004 to April 2005*
- *Hardware procurement, June 2005*
- *Software development/purchase, August 2005*
- *Installation and integration with database, September 2005*
- *Training and piloting, October 2005*
- *Acceptance testing, November 2005*
- *Mobile client system cutover, January 2006*
- *Operational follow-up and adjustments, February 2006*

Project Staffing and Budget

Staff will consist of Fire and Rescue Department (FRD) Systems Management and selected Operations EMS staff. Department of Information Technology staff will provide support for technical aspects for the CAD interface and other issues. Phase I and II project costs are for consulting and programming services, training and software licenses.

Prior year funding is available to complete Phases I and II. FY 2003-2004 funding of $408,982 will be used for the acquisition of mobile clients and contractor services for software development. No additional funding will be allocated in FY 2005.

Return on Investment

Funding this project allows the Fire and Rescue Department to comply with National Fire Protection Agency coding requirements and Virginia EMS mandated reporting requirements. Phase III allows the Fire and Rescue Department to achieve many agency objectives and realize a cost savings of staff time. The department currently responds to over 61,536 EMS calls per year, with many calls having multiple patients. The completion of a second incident report for each patient uses significant staff time. Integration of the mobile client with access to a central database eliminates one paper report per patient. Staff time spent archiving and retrieving reports to accommodate state archive requirements and Freedom of Information Act (FOIA) requests is lessened, and time spent in completing duplicative reports is eliminated. Having the mobile capability to link into other databases greatly improves the management and tracking of multiple patients in triage situations or terrorist attacks.

IT0056 COURTROOM TECHNOLOGIES

Project Description

This project will develop a prototype courtroom to use as a guide for future courthouse expansion and renovations to determine and assess future courtroom technology needs and requirements. This program evolved from the Pilot Courthouse Technology project, through a cooperative effort of the three Fairfax Courts (Circuit Court, General District Court, Juvenile and Domestic Relations District Court), the Department of Public Works and Environmental Services (DPWES) and the Department of Information (DIT), which developed a comprehensive, supporting Technology Master Plan. The plan identified court and courtroom technologies appropriate for the expansion and technology operations of the courts. Courtroom technologies facilitate trial proceedings and include evidence presentation, real-time court reporting, integrated evidence presentation, and video conferencing and can provide for judges' control of the technologies from the bench.

Project Goals

The audio/video infrastructure for a single courtroom may be substantially different from the equipment needed to network the audio/video from multiple Courts and courtrooms. Research also indicates a potential requirement for court staff to be more familiar with new technologies so they have the ability to support, manage and budget for courtroom technology equipment and other issues regarding the support of a state-of-the-art, modern courthouse technology.

Milestones

- *Initiate contracts and purchase orders, June 2004*
- *Equipment shipped and staged for installation, July 2004*
- *Equipment installed with necessary wiring; system integration, September 2004*
- *Testing of equipment, October 2004*

Progress to Date

This project is a FY 2005 request that will be purchased, integrated and installed during FY 2005.

Project Staffing and 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

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.

IT0065 EVIDENCE TRACKING

Project Description

The Police Property Section is responsible for the cataloging, storage and security of all evidence collected by the FCPD. Evidence must be available for analysis, trial and, in accordance with legal requirements, disposal. The Police Evidence Section uses a combination of an index card tracking system developed over 30 years ago and the property record fields of the PRMS to maintain an inventory of 44,000 pieces of evidence. Accountability for all evidence is critical to the integrity of the criminal justice system. This project is proposed to implement a barcode labeling system and database to track all pieces of evidence.

Project Goals

The objective is to purchase and install a COTS barcode evidence tracking database system. The evidence tracking system will generate a barcode label for every item of evidence presented for storage. The 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.

Milestones

- *Develop RFP for barcode system, July 2004*
- *Contract Award, October 2004*
- *Equipment installed with necessary wiring; system integration, testing, December 2004*
- *Data conversion to new system, March 2005*

Progress to Date

This project is a FY 2005 request that will be completed in FY 2005.

Project Staffing and Budget

FY 2005 funding of $70,000 is provided to automate the Police Property Section, which is responsible for the cataloging, storage and security of all evidence collected by the Police Department. A limited-term position will be utilized to assist during the inventory phase of the project. Evidence must be available for analysis, trial and, in accordance with legal requirements, disposal.

Return on Investment

Unrealized cost savings will be obtained from the natural reduction in staff time that will be needed to manage the evidence inventory. In addition, there will be a significant reduction in potential liability from lost evidence. Replacement of the current antiquated system with an automated system will improve all aspect of the business process.

3.3 CORPORATE ENTERPRISE

IT0004.1 FAIRFAX COUNTY MASTER ADDRESS SYSTEM

Project Description

This project will provide the County with a Master Address System that will be a foundation for many county applications that use address information. One centralized database will be developed with user agencies drawing address data through a unique identifier. This will reduce the need to store address data in user agency databases; rather they could link to the master address database to verify addresses to ensure conformity to the County address nomenclature standard.

This initial phase will construct the master database; compile, review, and scrub existing address data, enter it into the database, and create a basic data maintenance interface. This project will also put in place the interfaces to some key enterprise systems, including FIDO, IAS, LDS, 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 on analysis already done on the addressing needs of the County and the optimum solution to that.

Project Goals

At the present time, there is no single repository or master list of site addresses, despite Fairfax having over 350,000 addresses. Agencies within the County of Fairfax each maintain addresses that are significant 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 make the data correct, reliable and more available 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 would be assured. This system will ensure 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 the 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 on approaches to make the address assignment and tracking process more efficient. In FY 2003 the master address database design was revised and enhanced in house by Fairfax County personnel. Future stages of this project will com-mence in FY 2004 and carry over into FY 2005. Tasks will include constructing the address database, scrubbing address data, building an address maintenance application, and building interfaces between the master address repository and several key enterprise systems. Contractor support will be used in FY 2004 to assist in the data scrubbing, and in FY 2005 for the development of the address maintenance application.

Milestones

This project was initiated in FY 2000 and is expected to conclude in FY 2005. The majority of the time is due to the laborious process of scrubbing existing addresses, as well as refining the data structure; reviewing business structure; designing and implementing maintenance procedures; and developing data loading plans.

- *Complete Construction of Address Database, April 2004*
- *Complete Address Scrubbing to Parcels, October 2004*
- *Complete Address Maintenance Application, October 2004*
- *Complete Interfaces to Key Systems, October 2004*
- *Master Address Repository in production, November 2004*

Project Staffing and Budget

FY 2005 supplemental funding of $262,400 is provided to complete the creation of a centralized, standardized address repository that contains all Fairfax County sites addresses. An enterprise database will be designed and constructed and housed in the County Government building. The database will reside on the GIS Oracle server that is located in the server room. Addresses from many existing databases will be put into this database and thoroughly scrubbed by executing validation and verification processes.

Return on Investment (ROI)

A major quantifiable benefit of funding this project is the elimination of redundant data within the County. This will reduce the person hours presently spent on maintaining this redundant data across many agencies. Reconciliation time of some of the stand-alone address databases would be reduced or eliminated. Months of effort go into these projects every year. Automated processes could be developed for manual input into numerous databases. Savings will be realized in mailings by reducing the amount of mail that currently is returned due to incorrect addresses. Costs related to development and maintenance of new systems or upgrades of systems will be reduced, and the integrity and continuity of address information is preserved across systems.

The Master Address System will additionally enable county staff to better analyze demographics and statistics of subsets of the County. Services will then be developed and provided based on this stratification, thus eliminating offering services not needed in certain areas of the County. Some of the non-quantifiable benefits include a significant reduction in errors in providing services to the public, which includes erroneously sending emergency personnel to incorrect locations, especially in life- and property-threatening situations.

Additionally, the public's knowledge of a centralized address function could increase trust and confidence in the County's ability to serve and provide for its citizens. Increased accuracy and integrity of all address data are other benefits of this system. Maintenance and account-ability of address data would be centrally focused in one agency. One of the deliverables included a proposal for streamlining the addressing process. The redesigning of this process would increase the efficiency in assigning physical addresses. This would allow for increased process predictability to agency users and citizens alike. Funding this project will increase the availability of accurate, timely, online data to user organizations. Once there is a centralized database developed, DIT can output the data in any format.

IT0004.2 GIS ORTHOIMAGERY UPDATE

Project Description

Since 2000, the County has initiated a program to update the high resolution imagery and orthophotography. The original project to develop the GIS base map for the entire County was inaugurated in 1996. Aerial photography was taken in the following spring (1997) and served as the basis for preparing the planimetric data (observable features such as building footprints, edges of roads, sidewalks) and orthoimagery (spatially corrected aerial imagery). About 25% of the County's imagery has been updated in 2000, 2001, 2003 and 2004. Continuing the program in 2005 will ensure that all of the County area has been updated (there was some overlap) with high resolution imagery and that none of the imagery is more than 4 years old. No imagery was taken in 2002 because the State of Virginia provided lower resolution imagery of the entire County that year. The planimetric data have not been updated. The aerial imagery and orthophotography are extensively used by the Police, Fire and Rescue, Departments of Public Works, Zoning and the Park Authority

Project Goal

To continue implementing a four-year update cycle for the orthoimagery covering all 407 square miles of Fairfax County.

Progress to Date

In FY 2001, a new RFP for the aerial imagery was prepared and a vendor selected. Similarly, an RFP for the orthoimagery processing of the photography was developed, and the contractor selected. The County was successfully flown and photographed in March, 2001. Pilot tests of the new ortho conversion process and software were benchmarked and completed. The old (1997) orthoimagery in the northwest (NW) county quad map area was replaced by the 2001 imagery. Following the NW area update, the new imagery flown in March 2003 was similarly processed to update the northeast (NE) County quad map area. The photography flown in the spring 2004 will update the southeast (SE) county quad map area. Assuming the process continues successfully, the 2005 orthoimagery will update the SW quadrant and should be available in mid FY 2006.

Orthoimagery is being used increasingly every year with significant benefits (discussed in the Return on Investment). Some of these successful uses of the orthoimagery already include: The Department of Public Works and Environmental Services for the Gypsy Moth and Canker Work programs in tracking spraying, for site planning and review stream protection activities Public Safety. The Park Authority has used orthoimagery daily for reviewing rezoning cases, developing and implementing their land acquisition program (used to determine vegetation cover analysis, inventory and verifying existing site features, determining development impacts on parkland, and used in presentations to Park Authority Board). The Police Department has used the imagery to plan and analyze field activities and to do contingency planning. The Board of Supervisors and the Department of Planning and Zoning have used the imagery extensively for the Lorton/Mason Neck land swap and Lorton/Laurel Hill planning. Several key projects have been supported including planning and designing of Lake Accotink desiltation program, development of Regional Pond S-5, and I-95 Sanitary Landfill management. The county aerial imagery has also been shared and used in the Occoquan River reservoir area mapping project by the FCWA resulting in substantial cost savings. The City of Fairfax and City of Falls Church have also shared the County aerial imagery.

Milestones

- *County flown and photographed, March 2000*
- *County flown and photographed, March 2001*
- *Orthoimagery contract finalized and awarded, July 2001*
- *Pilot of ortho conversion process, data quality, and software benchmarked, December 2001*
- *Ortho imagery of SW and SE quad, April 2002*
- *County flown and photographed, March 2001*
- *Orthoimagery contract finalized and awarded, July 2002*
- *Pilot of ortho conversion process, data quality, and new software benchmarked, November 2002*
- *Ortho imagery of NW quad area, February 2003*
- *County flown and photographed photography, March 2003*
- *Orthoimagery contract awarded, December 2003*
- *Pilot of ortho conversion process and completion NE quad area, March 2004*
- *County planned to be flown for color photography mission, March 2004*
- *Completion of SE quad area, November 2004*

Project Staffing and Budget

FY 2005 funding of $205,000 will continue the annual update photography and imagery conversion to be completed in March, 2005. It should be noted that the State of Virginia had flown and developed orthoimagery for the entire state based on March 2002 aerial photography. Although the state imagery was of lower resolution than the required County imagery needs, the County took advantage of the States' program and deferred flying in FY 2002. Once the initial four-year cycle is completed we will be able to more accurately estimate the recurring update costs. Additional file storage will be included in the cost in order to handle the growing file space of the imagery.

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 four 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 to justify property appeals cases has allowed the County to more efficiently defend increased property valuations. Orthoimagery has become a highly visible, successful tool to serve citizens regarding their homes assessment valuations.

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 of 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 them to conduct analyses of buildings not possible in the past. This imagery augments orthoimagery which is taken directly overhead 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 Goals

The goal was to obtain obtain the oblique imagery and serve it to all County users who required 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

- *Authorize purchase order for oblique imagery, November 2002*
- *Fly county and photograph, March - June 2003*
- *Imagery made available to County Agencies December 2003.*

Project Staffing and Budget

FY 2005 funding of $150,680 will continue the annual update photography and imagery conversion to be completed in March, 2005. The involvement of County staff is limited, since the product is produced and provided by the vendor. The updates to the imagery

will be done biannually. If the County decides not to continue the updates, there will be a 10% charge (of the one year cost) to obtain complete ownership of the data. Current prices are considered to be discounted for local governement.

The provider of this product provides a two-year program to purchase the imagery. No other external costs are anticipated. The 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.

Return on Investment (ROI)

Agencies participating in the review of the product were convinced of the value of the product and were willing to identify funds that would assist in the purchase. However, in view of current budget constraints, and the high demands being placed on public safety, that may not be realistic. The imagery is expected to provide cost savings to field personnel by reducing their recurring travel requirements, and further enabling them to do analysis at their desktops with both the orthoimagery and the oblique imagery. No quantifed amounts were determined. There is significant potential here for the oblique imagery to assist DTA in assessments and thereby increasing the accuracy of their assessments and reducing staff field time

Several agencies were able to identify a range of benefits as outlined below:

Police Department

- Improved tactical operations support
- Improved special operations planning
- Better crime analysis

Planning and Zoning

- Improved presentational graphics
- Improved support of appeals and enforcement cases
- Enhanced site review
- Improved support to PC, BZA, BOS
- Reduced site visitation

Fire Department

- Enhanced capabilities in Pre-Emergency Planning
- Enhanced capabilities in operations in adverse conditions
- Fire Prevention — Reduced number of field visitations for inspections, and plans review
- Hazardous Materials Regulation
- Better Training
- Fire Operations/Incident Management — command post

Tax Administration

- Enhanced assessments
- Improved accuracy rate

IT0004.4 GIS DATA ENHANCEMENTS

Project Description

Locational information is essential to the GIS as well as to many county operations such as routing of vehicles, the ability to identify a location based on address, and the ability to use Global Positioning System (GPS) equipment and data, The County is pursing several efforts in including the enhancement of the County's Street Centerline data, modernization of the County's elevation data to make it directly compatible with GPS and compliance with Federal flood plain elevation data. Each of these enhancements provides more accurate location data to the County for its operations, and reduces the cost of acquiring critical aerial photography. These projects provide substantial value back to the County.

Routing tools are now available that determine optimum routes, provided an up-to-date and reliable GIS database are available. Future enhancements require review, adjust and correct the data and to implement effective routing software that will enable Fairfax County staff to route trips. As part of the project, the County is working with the Virginia Department of Transportation and with adjoining jurisdictions to build a common, accurate and maintained centerline file

The County's elevation data, while accurate, is no longer supported by the Federal Government for flood plain mapping, nor is it compatible with Global Positioning System (GPS) usage. This project will survey and establish a set of height measurements to comply with the latest standard used and supported by the Federal Government. Those values will be registered with the Federal Government too.

Project Goals

Contractor assistance will be obtained to accelerate this process to ensure the centerline file is accurate and

current. Over the past year, the County has implemented new web GIS software and architecture. GIS staff will evaluate the current Web-based routing tools to determine if additional software must be purchased. The Web-based approach provides the greatest ability to reach virtually all County staff, at minimal marginal cost. To date, the Web has proven to be an extremely useful tool for distribution of GIS functionality.

More web applications will be spatially enabled each year. Web technology delivers GIS functionality to the user's browser without any additional software cost to the user. The delivery of what would otherwise be expensive software capabilities to County employees and County residents with Web access has substantial financial savings implications. Over the past year, GIS has significantly improved the GIS centerline data and has worked with the Computer Aided Dispatch staff responsible for its street data to ensure the data will be useable for the CAD system. The County has established an agreement with the Virginia Department of Transportation (VDOT) to share and jointly maintain the centerline information. This will enable both organizations to have completed and up to date centerline data.

The elevation data modernization project is underway and will provide the County with a robust network of vertical measurements in the current federal standard. Furthermore these points will be registered with the Federal Government for easy reference as well as adjustments whenever they may occur. The project will also provide the county with a set of control points that are viewable from aerial photography (photopoints). This will substantially reduce the field time necessary to place temporary markers for viewing and referencing of the aerial photography into the GIS.

Progress to Date

Initial work on the centerline file has been completed. Since that has been done, the State's GIS office (Virginia Geographic Information Network—VGIN) has offered to update and merge the County's centerline data with data they are developing along with data from VDOT. This should be completed in late FY 2004. Once that is done additional review of the files will need to be done, as well as checking of attributes. A contract will be put in place for that work. At its completion the Street Centerline will be current and maintained for currency. That work will initiate in late FY 2004 and may carry over into early FY 2005. The contract for the elevation data modernization and establishing photo points was let in mid FY 2004 and will be complete in early FY 2005.

Milestones

- *Initial Street Centerline conversion work completed September 2003*
- *Height Modernization and Photo point project awarded January 2004*
- *Street centerline finalization project to be awarded spring 2004*
- *Height Modernization project completion, November 2004*
- *Centerline finalization completion, July 2004*

Project Staffing and Budget

Previously appropriated funds will be used for these on-going projects.

Return on Investment

Centerline data is the key data set for routing vehicles. Fairfax County staff and vehicles log an immense amount of miles and operational hours every year. Non-school bus vehicles log an estimated 31 million miles a year — and over 3 million operational hours. In addition, centerline data is used. Providing the data and tools necessary to reduce the travel time will provide significant savings to the County.

Web functionality for GIS routing provides immense cost savings because heretofore prohibitively expensive GIS functionality can be delivered to virtually unlimited users at dramatically reduced cost to the County, and at no additional cost to residents with Web access. GIS also enhances the ability to locate and analyze County data

online at any time of day. This delivers information to citizens and staff when and where they need it, saving travel and scheduling time. Providing routing to all County employees has the potential for significant savings. The County has approximately 3,700 non-school bus vehicles. Based on the fact that the 30 motor pool vehicles log 8,500 miles/year, and 978 hours, the total miles logged on the County vehicles is about 3.2 million miles. If the County were to achieve a 0.1 percent savings in time and miles on these vehicles through the use of automated routing tools — the savings would be over 31,000 miles and over 3,600 hours of staff time and reduced vehicle maintenance. The cost savings in staff time alone would be over $90,000 (based on a rate of $25/hour).

The street centerline project provides a wide range of enhanced capabilities along with cost avoidance and cost savings. Having updated centerline data will enable the use of an enterprise-based routing capability that will save in the time necessary for County staff (e.g., social workers) that must traverse wide areas as part of their daily operations. It will enable the use of Automated Vehicle Location for emergency vehicles, and cost savings for refuse truck routing due to savings in staff time, and wear and tear on vehicles. Routing has the potential for substantial cost savings. DPWES is projecting several hundred thousand dollars of savings just in the improvement of routing its refuse collection vehicles. Savings from reducing the amount of surveying necessary as part of the aerial photography will have significant savings. Initial estimates are that over $10,000 will be saved annually. The Web-based applications are available 24 hours a day, seven days a week, furthering the ability of citizens and staff to locate key information whenever and wherever necessary.

IT0006 TAX/REVENUE ADMINISTRATION

Project Description

The purpose of the Tax Systems Modernization project ensures that the County's objective of administering the corporate tax systems (the major source of the County's general fund revenue) continues to be supported by a functionally and technically sound architecture capable of accommodating legislative and functional enhancements. This current project phase replaces the obsolete real estate system which was developed in-house in the early 1970s. The business functions of assessing real property, billing, and collecting are supported at a very basic level by the automated system. However, in the 25 plus years that the system has been in operation, assessment practices, business processes, and billing and collection techniques have changed significantly. The gap between the business requirements of the Depart-ment of Tax Administration and the automation provided by the system had widened to a level of significant concern, and the system's ability to support business operations would require significant, labor intensive programming to enhance. Another need for replace-ment is evident in the increasing manual effort is required to complete the tax roll each year.

Project Goals

The continued reliance on outdated programming languages exposes key portions of the real estate system to risk of complete failure, and lessens the opportunity to incorporate up to date factors required today. A significant technical priority is the replacement of outdated technology with up-to-date supported software architecture. The outdated technology also limits ability to integrate to other County systems that can provide relational benefits, such as the Geographic Information System (GIS) and other web-based applications, which are also major over-all goals for facilitating fast, convenient, and cost-effective service to taxpayers.

Tax and Revenue Modernization is being concentrated in the following three areas:

1. *Replacement of the aging real estate assessment and administration mainframe system;*
2. *Enhancing the functionality of the real estate accounts receivable system employing COTS software;*
3. *Replacing the mainframe cashiering system.*

Progress to Date

A COTS cashiering system has been purchased and implemented for processing assessments and payments. The cashiering product is integrated with all tax systems. Conversion of the existing real estate assessment (CAMA) and tax administration data has been completed and implementation of the new client server Real Estate Tax System assessment and administration tax modules was put into production in February 2004. The Real Estate accounts receivable system requirements have been finalized and programming for this module started in April 2004. A new Real Estate delinquent tax collection tracking module is planned to be implemented as the final phase of this multi-phase initiative that results in a comprehensive, integrated solution.

Milestones

Real Estate CAMA/Tax Administration:

- *Install / Test Base System Software, May 2002*
- *Complete Gap Analysis, July 2002*
- *Develop Interfaces, October 2003*
- *Data Conversion, January 2004*
- *Training, January 2004*
- *Implementation, February 2004*

Cashier For Windows:

- *Implement Personal Property Interface, January 2003*
- *Upgrade Business License Interface, February 2003*
- *Implement Parking Ticket Interface, April 2003*
- *Implement Real Estate Interface, June 2004*

Real Estate Accounts Receivable:

- *Implementation of COTS software, July 2004*

Project Staffing and Budget

The real estate modernization effort will be partially funded by $3.4 million that was carried over from the Integrated Tax System project. A supplemental FY 2004 allocation was granted to complete implementation of the assessment (CAMA) and administration modules, and to integrate the accounts receivable functionality. A combination of County DTA and DIT staff, vendor, and other contractor staff will be used to implement the CLT COTS product. In FY 2004, an additional appropriation of $100,000 was funded to integrate the cashiering product with the new real estate system. The project will be completed in early FY 2005. No additional funding is allocated.

Return on Investment

Improving and enhancing the system technology is consistent with the County's strategic IT plan. There are approximately 45,000 parcels that cannot be assessed via the computerized assessment system. These parcels fall into two categories: the *trend* approach whereby assessments when the land value exceeds the building value cannot be appraised; and the cost approach whereby an appraisal cannot be used because property characteristics cannot be entered due to lack of space on the system files. New technology will resolve these problems in addition to providing the ability to interface with the County's Geographic Information System. Use of GIS will enhance the department's ability to defend assessments under appeal that result in a loss of revenue.

The cashiering COTS product solution provides the functionality to collect and store payments under a central database; streamlined payment processing through customized interfaces; and provides for centralized and decentralized, audit, and correction. It provides safeguards against deposit fraud. Much of the current deposit procedures are manual, the COTS cashiering product will fully automate those processes.

IT0006.5 WEB-ENABLING CASPS/FAMIS

Project Description

To provide the County with the ability to integrate mainframe applications, screens and data with a Web-based graphical user interface (GUI) software, to use in conjunction with other County corporate information systems that operate in the CICS environment. The integration software provides the user with new graphical screens with more functionality than the traditional CICS "green screens," allow the use of "point-and-click" technology, and facilitate the design of consolidated and/or linked screens to streamline commonly used processes between disparate applications.

Project Goals

The project will add demonstrative value to all of the County's corporate systems (e.g. County and Schools Purchasing System (CASPS), Financial and Accounting Management Information System (FAMIS), etc.) by making those systems more "user friendly" and improving their efficiency for all users. The goal is to use up-to-date technology to enhance and extend the life and utility of corporate systems.

Progress to Date

The County has completed and implemented the first phase of the ICASPS project. The County and Schools purchasing system is now available on the Info web. Agencies can now use the web application to add a Purchase Request, verify funds from the FAMIS application, retrieve and review existing purchasing documents. The extremely customer friendly and intuitive application has been extremely well received by both County and Schools personnel. The first process for the FAMIS application will be in production in March 2004. This is a Schools initiated project to automate an existing process for allocation of funds. The current process is labor intensive including duplicate data entry, use of

interoffice mail and other manual processes. The new web process will integrate and replace the existing manual processes and greatly reduce the time involved. This process also is enhanced through the integrating of the email application and the legacy system. When approval is required for any of these financial requests, the next level of approver will be notified via email that their review is required. The approver will be able to link to the document for review. These implementations have demonstrated that this web enabling process can be scaled to the other mainframe based legacy systems.

A second major component of this project was the installation a scaled infrastructure. This included the installation of servers, the education of the DIT staff and the necessary security that will support the continued use of the County's EIA solution, webMethods.

Milestones

The following are the major steps were necessary to complete the web enabling of ICASPS and IFAMIS:

- *Design streamlined processes ..... Completed*
- *Receive and install webMethods software ..... Completed*
- *Train DIT staff in webMethods and ASP ..... Completed*
- *Complete initial requirements analysis ..... Completed*
- *Program initial processes in webMethods and ASP ..... Completed*
- *Review and enhance enterprise infrastructure ..... Completed*
- *Install ICASPS Purchasing Requisition processes ..... Completed*
- *Install Schools EFORMS processes .... Completed*
- *Continue to design processes for CASPS ..... On-going*
- *Identify processes for FAMIS ..... On-going*
- *Implement solution*

Project Staffing and Budget

The estimated project cost of $400,000 was shared between the County and Fairfax Public Schools, with the County providing $310,000. The primary costs were for consulting services, training and hardware. The County staffs were trained in ASP and the webMethods software and have taken over these tasks.

Return on Investment

This project will make all corporate mainframe systems much more user friendly. The benefits of user-friendly mainframe systems are numerous. The most significant benefits are:

- **Savings from more efficient processes:** Approximately 60,000 small purchase orders, large purchase orders, and a corresponding number of other receipt documents processed annually through CASPS require significant staff effort. Research has shown that the enhanced GUI/streamlined processes will reduce the time to complete those 120,000 actions in CASPS by 5 minutes each, which equates to 60,000 minutes or 1,000 hours saved. Based on an average of $15.00 per hour, the more efficient processes will save at least $15,000 per year in staff time.
- **Savings from reduced "false starts," errors, and rework:** The simplified system with GUI/streamlined processes that guide users through the CASPS functions will reduce the number of "false starts" (trying to use the incorrect screen or transaction to accomplish a task), user errors, and rework on the part of users. It is estimated that 10 percent, or 12,000 of the 120,000 transactions described above are completed only after some sort of user problem, with users requiring approximately three to five minutes recovering from these problems. Therefore, 12,000 errors x an average of 4 minutes per error is equal to 48,000 minutes saved, or 800 hours of staff time saved, and when calculated at an average hourly rate of $15.00 per hour, is equivalent to $12,000 per year.
- **Savings from reduced "help desk" calls:** DPSM employed one full time staff person to receive and respond to approximately 2,700 "help desk" calls during the year. Research indicates that 10 percent of those calls were a direct result of the users not remembering which transaction number/screen to use to accomplish a task. A GUI/streamlined process that guides and prompts users through the screens will eliminate those 270 calls, which correlates to a 10 percent savings for the "help desk" employee's time, or $40,000 x 10% = $4,000 per year.
- **Reduced user error and frustration —** The GUI screens and streamlined processes will lead users through the County's business processes, eliminating memory based mistakes and frustrations caused by not knowing the next step.
- **Increased user confidence and satisfaction —** The GUI screens and streamlined processes will enable users to complete tasks quickly and accurately, and give users confidence and satisfaction.

- **Reduced training burden —** The GUI screens and streamlined processes will reduce the time required to train new users. The users will not have to become familiar with the transaction numbers or the proper sequence of transactions or screens to accomplish tasks.
- **Extended Access:** The Web-enabled versions of CASPS and FAMIS will be extendable (with appropriate security provisions) to the vendor community, affording them the ability to inquire on the status of an invoice or a payment, and enable more integrated workflow processes within and among systems.

IT0008 LIBRARY PROJECT

Project Description

This project replaced the Library's 11-year-old integrated library system (Inlex), which was being phased out by the vendor, with Sirsi-Unicorn, a more modern system that takes full advantage of current technology and demonstrates flexibility that will broaden options to deliver efficient, quality library service to Fairfax County residents.

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 separate system network connections for Library staff use, and the public access PCs in branch libraries that provide general Internet access for patrons. The public internet portal connection is hosted by Sirsi.

Progress to Date

The project completed in FY 2004, with several on-going vendor enhancements being implemented in early FY 2005.

Project Staffing and Budget

In FY 2001-02, Library IT staff (11 FTE) were consolidated with DIT that shifted infrastructure support and provided opportunities to strengthen and broaden the technical skills of Library staff in optimizing use system resources. DIT established the infrastructure architecture complimenting the vendor product and provided technical support, and the vendor worked with DIT and Library staff to implement the system.

Return on Investment

Patrons have more opportunities to interact with the Library and information resources. The following out-comes are expected:

- Customer satisfaction rate will increase (based on survey results);
- Number of registered users as a percentage of the population will increase;
- Use of the Library section of the County Web site will increase;
- Number of interactive services on the Library section of the County Web site will increase;
- Total customer contacts will increase.

The upgraded technology and application infrastructure:

- Expands capacity to manage growth in demand for library services required to serve over 1 million County residents;
- Expands capacity to manage access to remote information resources available in other FCPL branches;
- Provides access to information located outside FCPL, including other library catalogs, electronic documents and remote databases;
- Replaces all terminals with PCs that will allow library users to optimize the information retrieved from FCPL and remote information sources;
- Provides decision support information for library management;
- Facilitates the growth of the digital library by linking bibliographic records to stored digitized documents;
- Provides self check-out stations in busy branches to expedite check-out procedures.

IT0011.5 INTEGRATED DOCUMENT MANAGEMENT/JDRC

Project Description

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 increased security and integrity of its 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

Agency and DIT staff has completed the workflow analysis and the document discovery, and have begun working with the County's document and content management solution vendor to finalize the requirements for the project. Staff has attended site visits to courts with implemented electronic record management systems and is participating in a countywide team on document management and workflow process.

Milestones

- *Requirements Analysis and Definition, January - March 2004*
- *Design Phase, April - June 2004*
- *Build Phase, July - October 2004*
- *Testing Phase, November - February 2005*
- *Training, December - March 2005*
- *Deployment, April 2005*

Project Staffing and Budget

FY 2005 funding of $714,494 will complete the first phase of the installation, integration, implementation and on-going support of the Document Management and Imaging system for the Juvenile and Domestic Relations District Court (JDRC). Existing project funds have allowed for the procurement of the document management hardware and software and to contract with an integrator for the implementation, support and customization of the system, and the necessary staff training. Project staffing includes a technical project manager from DIT, a business project manager from Juvenile Court and a team of business and technical staff from DIT and the Court which has participated in the project planning and will continue through the implementation phase.

Return on Investment

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.

IT0011.7 INTEGRATED DOCUMENT MANAGEMENT/DOF

Project Description

This is a new project for FY 2005. The overall concept of this project is to provide a solution that meets the county's goals for an all-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 the new accounts payable electronic process flows 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 determine and correct problem areas in our decentralized Accounts Payable processes.

Project Goals

This project 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 work flow technologies and to replace the use of paper document processing. In addition to the extensive process efficiency and economy gains expected by this project, we hope to increase countywide internal controls and management reporting by utilizing e-mail and automated reporting techniques to provide better analysis of the weak-nesses in the decentralized AP system.

Milestones

Project funding will support Phase I efforts to achieve the following:

- *Develop a Department of Finance user group to define requirements, July 2004*
- *Develop a requirements document that will lead to a design plan, October 2004*

Progress to Date

This is a multi-year and multi-phased project dependent on the successful completion of Phase I, which will include 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.

Project Staffing and Budget

FY 2005 funding of $245,762 is recommended to support Phase I. Project staffing includes a technical project manager from DIT, a business project manager from the Department of Finance and a team of business and technical staff from DIT and the DOF which has participated in the project planning and will continue through the implementation phase.

Return on Investment

The greatest financial returns from implementing the Countywide All Electronic Accounts Payable Process (Document Imaging, Electronic Signature, and Workflow) 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. 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. As well, a more expedited payment process will maximize opportunities for discounts based on faster payments.

IT0011.8 INTEGRATED DOCUMENT MANAGEMENT/DFS

Project Description

The Department of Family Services (DFS) promotes and supports the well-being of families and individuals within the community by providing integrated services that help protect them from abuse, neglect and exploitation while assisting them in achieving and maintaining independence and their greatest level of self-sufficiency. An integral part of this mission is to maintain accurate client information. To ensure quality services, the client records need to retain physical integrity, be easy to retrieved and updated, and be protected from unauthorized access. In order to maintain state and federal standards, records must be maintained and destroyed as appropriate or retained permanently as required.

This project will automate the DFS record/document management processes by installing a document

management system that utilizes imaging, document and records management, e-forms and workflow technology. 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 clients 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 system from which sensitive Human Services documents can be retrieved as necessary to fulfill case management needs of County residents and improve response times for client inquiries of case records. In addition, the project will allow for the 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, thus freeing up scarce physical space in the Pennino building for more productive uses. It is anticipated that this milestone 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 service delivery.

Milestones

There will be several specific Milestones that will be included. Phase I Milestones include:

- *Develop a Department of Family Services user group to define requirements, July 2004*
- *Develop a requirements document that will lead to a design plan, October 2004*
- *Finalize the design and development process, January 2005*
- *Procure Hardware/Software, January 2005*
- *Install Equipment, March 2005*
- *Test the Pilot Process, April 1005*
- *Develop a Beta test Implementation Plan, May 2005*
- *Conduct Training, June 2005*

Progress to Date

This is a multi-year and multi-phased project dependent on the successful completion of Phase I, which will include 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.

Project Staffing and 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.

Return on Investment

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.

IT0022.9 CORRESPONDENCE TRACKING AND MANAGEMENT SYSTEM

Project Description

The purpose and mission of this project provides a readily available infrastructure for County agencies to use to capture communications, track contacts, events, and complaints. The infrastructure will create an enterprise environment that is supported by the County's IT architecture. This project proposes to use an automated, full function and proven Commercial-Off-The-Shelf (COTS) product, IQ by Lockheed Martin (formerly ACS, Inc.), that has been successfully implemented in several County Agencies, including Board of Supervisors, County Executive, Clerk to the Board, Human Rights, Public

Affairs, Department of Public Works & Environmental Management and Consumer Protection. 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

This on-going project begun in FY 2001 provides County agencies with automated, full function and proven Commercial-Off-The-Shelf (COTS) solution that captures communications, track contacts, events, interactions and complaints. The overall intent is to leverage an enterprise solution so that agencies can quickly take advantage of opportunities to manage and contacts within and across functions as relevant.

Automating these functions will assist in providing seamless service to the County citizens by aiding Agency employees to share data, identify and analyze trends, and reduce duplications of effort. In addition, integrating GIS with IQ enhances the information and its presentation to users.

Progress to Date

This multi-phased project takes advantage of existing proven technology that is part of the County's IT architecture. Previous implementations have established the infrastructure — servers, software and implementation strategies, and several agency specific implementations, so that more agencies can quickly take advantage of this opportunity to use this technology.

Implementation of this phase of Hosting IQ consists of the following elements.

- Enhancing the IQ Respository, where IQ data and "IQ-type" of data can be shared with both IQ users and non-IQ users. The Repository will permit data searches, management reporting, trend analysis and decision support. The Data Repository will be accessible via a web browser with all the functionality currently available in the IQ application. This phase of the Hosting IQ project will incorporate non-IQ data sources and applications with IQ data.
- Continue Integrating IQ with GIS. Providing the functionality of GIS in IQ has obvious benefits. Using this feature is highly anticipated by both current and prospective IQ users. A simplistic interfacing between the County's GIS database and IQ allowing for the GIS data points to be integrated into the address information will be accomplished in FY 2004. The natural continuation is creating an IQ layer in the County's GIS database to allow for a more robust reporting mechanism.
- Implementing IQ in another County agency.
- Procurement of an IQ Roles site license to enhance the functionality of workflows.

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.

Milestones

- *DPWES, Implementation, August 2003*
- *Human Rights, CCCP migrated to hosting environment, September 2003*
- *DPWES, Implementation evaluation, October 2003*
- *DOT, Review business process and development of workflow, January 2004*
- *Police, Pilot — Review business process and development of workflow, April 2004*
- *GIS, Geographic infrastructure and interface development/implementation for selected IQ accounts, April 2004*
- *Data Repository, IQ participants requirements definition, program development and implementation, June 2004*
- *DOT, Implementation evaluation and gap analysis, June 2004*
- *Police, Pilot — Implementation evaluation, June 2004*
- *DOT, Phase two — project tracking business process review and workflow development, December 2004*
- *Multi-agency, Roles implementation and workflow enhancements, January 2005*
- *Police, PSA Complaint Tracking substation implementation, February 2005*
- *Data Repository, Non-IQ contributors requirements and specifications, November 2004*

- *GIS, Phase two agencies implementation plus feature and reporting enhancements, March 2005*
- *Additional agency — Business process review, workflow development and implementation, April 2005*
- *Police, PSA Complaint Tracking implementation evaluation and gap analysis, May 2005*
- *Data Repository, Non-IQ contributors program development and implementation, June 2005*

Project Staffing and Budget

Additional funds in the amount of $290,600 are budgeted in FY 2005. This year's 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. Agency will fund specific data conversion tasks and reports.

Return on Investment

Successful implementation of this service-enhancement project will:

- Provide enhanced communications between county staff, departments and agencies.
- Agencies will be able to share and monitor the status of projects, responses, and other issues and events as those items progress through the County processes.
- Require agencies to analyze the processes in place, evaluating and documenting the validity of existing business practices.
- Automate agency business processes and workflows.
- Reduce duplication of information and efforts by enabling the sharing the information between agencies using present e-mail methods.
- Create a seamless constituent interface and enhanced customer service.
- Cost avoidance: By implementing a proven product, agencies will forego the expense and effort of researching and evaluating CRM solutions. In addition, this enterprise solution does not preclude installations of applications that support the County's IT architecture, or interact with other agencies' CRM applications.

IT0022.10 CRM — CALL CENTER INTEGRATION

Project Description

This project provides the foundation for the acquisition of a set of technologies and implementation of a comprehensive industry standard solution, with the FY 2005 focus to address needs for the Human Services Consolidated Service Planning (CSP) Call Centers. The development of a comprehensive call center technology solution 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 in these call centers 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 mission of this project is to procure and implement industry standard Call Center technologies. 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. The goal of the technology is to provide opportunity to leverage call center resources through virtual sessions. This project does not build or consolidate existing call centers to create a central call center site. It 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

Staff are evaluating existing technologies already deployed, as well as contemporary CRM solutions that provide a central basis, and fill the void and compliment functions of in-place solutions.

Milestones

- *Design, December 2004*
- *Implementation, December 2004*
- *Hardware and Software Installation, March 2005*
- *Database Review, March 2005*
- *Call Control Table Testing, March 2005*
- *Training, March 2005*
- *Deployment, March 2005*

Project Staffing and Budget

In FY 2005, funds in the amount of $250,000 will supplement existing funds for this project. A project steering committee consists of DIT and agency staff that use or have interest in call center functionality for their services.

Return on Investment

Implementing standard technologies will produce significant cost savings. 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 callers 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 in the following areas from the increased productivity due to automation or streamlining of telephone processes, improved productivity associated with performance management systems made possible through technology, improved and reliable capture of data required for mandatory service reporting which will maximize program funding opportunities, as well as best practice service delivery and improved operational efficiencies.

IT0024.1 PUBLIC ACCESS TECHNOLOGY — KIOSK

Project Description

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 29 kiosks operational in the County with two more to be deployed in FY 2005. These kiosks have accounted for over 7,488,710 citizen inquiries to date.

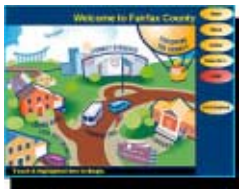
Project Goals

The primary goal is to network all the kiosks and provide the information and services that are available on the County Information Web to the entire kiosk. The longer-term goal is with the acquisition of Documentum our content management software, which stores the content in one place from where it can be deployed to the kiosk, web or any other platform. The kiosk staff is committed to researching the latest technology that can be used on the kiosk to provide better information and services. The following goals have been identified to upgrade and expand KIOSK services:

- Increase the information and business transaction capabilities of the kiosk;
- Introduce advanced sound control and ADA compliant hardware and software;
- Migrate the Kiosks to a more sophisticated authoring tool that will provide enhanced Internet, credit card and database access;
- Expand the Kiosk program to other jurisdiction;
- Deploy several additional Kiosks with Internet capability;
- Deploy content from a single source for Web and Kiosk.

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.
- Deployed run time version of kiosk application on all kiosks.
- 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.
- Redesigned information architecture for all our partners.
- Completed replacement of kiosk hardware that included CPUs, printers, monitors, etc., at each kiosk location.
- 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.
- Completed Partnership with Town of Herndon.
- Network INVOA kiosk.
- Completed Partnership with Federal Emergency Management Agency (FEMA).

Milestones

- *Deployment of two kiosks in FY 2005*
- *Continued upgrade of development software*
- *Continued redesign of information architecture*
- *Redesign CRiS kiosk Program Town of Clifton*
- *Add new Partners*
- *Integrate with Content Management System*

Project Staffing and Budget

Five Department of Information Technology staff will be required to support this project. A portion of the FY 2005 budget of $500,000 will be used for consulting services, software and hardware acquisitions and training.

Return on Investment

The public access programs have two areas of Return on Investment, one for the residents of Fairfax County and one for the County government and its employees.

From a County resident perspective the Return on Investment can be identified as follows:

- Greater convenience and less travel;
- Quicker service and improved access to information and business;
- Increased response to customer service expectations;
- Increased confidence in local government.

From the County government perspective, the Return on Investment can be identified as follows:

- Ability to service population increases without increasing staff resources;
- Ability for residents to readily see, use and feel County information technology investments;
- Ability to reduce paper and postage costs;
- Ability to reassign staff to more complex tasks;
- Ability to service residents on evenings and weekends without using staff;
- Ability to generate revenues through e-commerce and partnerships;
- Ability to retain technology and business leadership in the local government arena.

IT0024.2 PUBLIC ACCESS TECHNOLOGY — INTERACTIVE VOICE RESPONSE

Project Description

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. In addition, DIT will evaluate the use of XML and other speech recognition technology.

Progress to Date

The DIT IVR currently answers more than 3,000 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 Ticket 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)*

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,

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

Milestones

The following applications are scheduled for completion during FY 2005:

- *Re-write Civil Court to integrate with new state system*
- *Re-write Public Housing Line.*
- *Landlord Info Line*
- *Add Spanish version for the following applications:*
  - *Health Department*
  - *Victim Service Information line*
  - *Courts IVR*

Project Staffing and Budget

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

Cost Avoidance — in terms of hours per day spent interacting with callers, it would take a staff of 15 to equal the time the IVR spends with callers every weekday (124 hours per day divided by 8 hours).

Cost Savings — At a savings rate of $4.00 per call (considering that almost 20% of our IVR calls may be

transferred to staff), with the DIT IVR taking approximately 3,000 calls per weekday, the cost-savings are estimated at approximately $12,000 per day. These savings calculations are exclusive of the benefit to the County of the calls handled by the IVR on weekends.

IT0024.3 PUBLIC ACCESS TECHNOLOGY INTERNET/INTRANET INITIATIVES

Project Description

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 FY 2004, Public Access Technologies provided a secure and robust environment for the enhancement of both the information and infrastructure architectures, supporting e-government initiatives in order to facilitate delivery of integrated and accurate information to citizens via multiple platforms. These enhancements generated economies of scale which provides the needed support for the ever-increasing demand for e-commerce/e-government services. Additionally this facilities the sharing of data across jurisdictional lines; thereby increasing both the scope and value of information and services we provide to citizens.

In FY 2005, Public Access Technologies will move our existing web content into an enterprise content management system. The enterprise content management system aids Fairfax County in the development of taxonomy of information and services. This will enhanced the public web site search capabilities.

In addition we will be looking at new technologies (such as portal technology and collaboration tools) that would provide added value for Fairfax County.

Project Goals

The vision described in the Project Description will be achieved by accomplishment the following goals.

- Provide new information and services on all platforms.
- Build single information architecture, a single supporting infrastructure and a single content repository for all platforms and agencies.
- Utilize various features of content management to provide accurate and reliable information.
- Implement the County's taxonomy of information and services.
- Implement a improved search on the public web site.
- Implementation of standards and processes for information engineering so that the same applications and data can be used and delivered across multiple platforms.
- Continue 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 over the last year has been extraordinary. The County site is receiving approximately 19,260 visitors per day, which equates to an average of 124,251 page views per day and an average of 726,369 hits per day. The Web server delivers approximately 1.3 terabytes of data to the public each month. Approximately 55 County agencies now 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.

Progress under Internet/Intranet Initiatives has occurred in the following venues:

1. Public Web Site Redesign,
2. Infrastructure and Architecture Management,
3. Interoperability,
4. Infoweb Redesign,
5. Web Content Management (WCM),
6. e-Services.

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, we coordinated over 120 content contributors 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.

2 – Infrastructure Architecture and Management

The following Internet/Intranet Infrastructure initiatives were begun last year:

- *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 2 .NET pilot 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.

4 – Infoweb Redesign

An in-depth analysis of the DIT section of the Infoweb was undertaken. We restructured that section both in terms of content and presentation. The look and feel of the main page of the Infoweb was redesigned as well. We are assisting other agencies in adopting the DIT model. Unlike the Public Web Site redesign, this will be a long-term process.

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 purchase 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*

Approximately 55 County agencies now have a presence on the site, offering approximately 11,049 HTML documents, 12,549 PDF documents, and 14,061 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.

Milestones

In continuation of last year's initiatives, the following Milestones will be implemented to enhance the information and infrastructure architectures supporting e-government initiatives. This will facilitate delivery of integrated and accurate information to citizens via multiple platforms. The Milestones are:

- *Implement the County's taxonomy of information and services*
- *Implement a improved search on the public web site*
- *Develop standards and processes for information engineering for applications residing on the e-government platform*
- *Continue support and expansion of e-payment transaction*

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.

Project Staffing and Budget

Seven Department of Information Technology staff will be used on these projects. Consulting Services will be used for a number of planned activities. A portion of the FY 2004 budget of $500,000 will be used to fund requirements for these projects.

Return on Investment

The potential benefits of Internet and Intranet are enormous. Information and business functions will be available 24 hours a day, seven days a week, at the convenience and location of the customer without long lines or telephone busy signals. Businesses are able to access current solicitation information, download RFP packets, register with DPSM, get information on pre-proposal conferences, etc., all without having to interact with County staff during normal business hours. County residents are able to get information on all the services provided by the County, find out about child care and health programs, pay taxes, query the Real Estate Assessment database, apply for a library card, get Neighborhood Watch information, communicate with their elected officials, and much more. County staff is able to concentrate more on other duties, and "do more with less" since the number of phone calls and counter visits will be reduced.

The FY 2005, project initiatives allows the County to enhance both the information and infrastructure architectures supporting e-government initiatives in order to facilitate delivery of integrated and accurate information to citizens via multiple platforms. Internally, this will generate economies of scale in providing the needed support for the ever-increasing demand for e-commerce/e-government services. This will be accomplished by allowing business support personnel to contribute Web content without acquiring any additional technical expertise. Collaborative initiatives between agencies, other governments (state, local, and federal) and business will allow the sharing of information and services across jurisdictional lines; thereby increasing both the scope and value of information and services we provide to citizens.

This project implements full scale electronic government for Fairfax County, moves Fairfax County toward the vision of government without "walls, doors and clocks" and will allow the citizens of Fairfax County access to their government 24 hours a day, seven days a week.

IT0024.6 ELECTRONIC PAYMENTS

Project Description

The purpose of this project is to expand to the citizens and vendors of the County the ability to pay their taxes, fines, fees, permits, etc., using a variety of technological solutions. Currently few departments have either the capacity or the facilities to allow their customers the use of the Internet, Interactive Voice Response or kiosks in conducting financial transactions.

This project will allow the County to have a single provider for Electronic Bill Presentment and Payment. The County has signed a contract with Govolution, Inc., one of the premier providers for electronic payment solutions. The County's direction is to have one vendor supply the electronic solutions for all agencies whether it be using a kiosk, an Interactive Voice Response (IVR) or over the Internet. There is currently no standardized countywide deployment of electronic payment and transaction services. Some County agencies are required to accept and process financial transactions in the normal course of business, while others are not. Among those agencies that process financial transactions, some are currently capable of accepting credit or debit payments while others must require payment via cash or check.

This project will provide a uniform payment process to constituents and consolidate bill presentment and payment through one vendor. The agencies within the County that will be using these forms of payment are in different stages of development, ranging from almost completed Internet solutions to concepts, ideas and requirement documents. Funding will pay the set up and initial subscription costs that will be required to accomplish these initiatives.

Project Goals

This project supports several of the strategic DIT directions with the goal of building a *"government without walls, doors or clocks."* This project will expand the usage of the three technology platforms that are identified as the County's e-government initiative, namely, information kiosks, Interactive Voice Response and the County Web site. It will provide the citizens/ vendors with various alternatives in doing financial business with the County without having to stand on line.

Progress to Date

The County signed a contract with Govolution, Inc. in May 2001. In September 2001, a presentation to all the County departments was given to solicit departments that desired the ability to receive payments either over the Internet, telephone or at one of the County supported kiosks. Eight departments and the Park Authority expressed interest in using Govolution's suite of products. These departments are:

- Department of Human Services
- Department of Health
- Department of Transportation
- Department of Public Works and Environmental Services *(Business Planning and Support)*
- Department of Public Works and Environmental Service *(Wastewater Planning and Monitoring)*
- County Executive Office *(Office of Partnerships)*
- Library

The Park Authority, which has the first application scheduled to go live in February 2002, uses the credit card verification product supplied by Govolution. The Department of Tax Administration's parking ticket system is the next process to be implemented by Govolution and DIT. This will provide the citizens the capability to pay multiple parking tickets using either the Internet or over the telephone *(Interactive Voice Response)*. It is anticipated that the parking ticket application will be in production in early FY 2003.

Milestones

- *Implementation of Park Authority's Internet registration process and fee payment system, April 2002*
- *System design and specifications for Department of Tax Administration Parking Ticket payment system for the Internet and Interactive Voice Response, December 2002*
- *Implementation of the Parking Ticket Bill Presentment and Payment application, June 2003*

- *System Design and Specifications and implementation for Department of Tax Administration, May 2003*
- *Personal Property and Real Estate system for Internet and Interactive Voice Response, July 2003*
- *Identification of order for next applications, June 2003*
- *System design and specification for four departments, December 2003*
- *Implementation of four departments, December 2004*
- *Identification of other interested departments, December 2004*

Project Staffing and Budget

FY 2003 funding of $340,000 will be for the purchase of the software and maintenance required for the initial implementation of the various e-payment applications. Remaining funds will be for contractor services to provide the functional requirement for the Web readiness of each agency, which will be initiated prior to the purchase of the software and hardware. This plan would fluctuate depending upon the processes/systems that would be addresed. The Web readiness of the application will be a major factor in the size and scope of each project.

Return on Investment

The measurement of ROI for this project is generated because of the consolidation of resources. Providing electronic payments to our citizens in various venues makes this a useful and productive project.

- **Cost Savings —** If the Govolution project is not funded, there could be as many providers of electronic payment as there are agencies or applications. The technical nightmare that this could cause would add tremendous amounts of resources to monitor and support payment activities across the County. A single electronic provider that supports the Web-enabling of the data that the County is doing is the best solution.
- **Cost Avoidance —** As above, it is the minimizing of providers that will avoid extra resources and cost.
- **Non-quantifiable Benefits —** Providing citizens with multiple choices to contract their business with the County can only be described as good customer service.

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 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 worthy to replace the current portfolio of systems at this time. However, new application integration and Web tools strategy as part of the Department of Information Technologies goal to improve the utility and functionality of systems as feasible, present a cost-effective means of 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 employee and manager-based self-service type business processes. 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 tool.

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.

Project Goals

The primary technology goal is to migrate the current system to a more standard, supportable database, development environment, and incorporate 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 County technical team 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 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.

Milestones

The migration of the PRISM system to an industry accepted and supported database, language and presentation platform will continue in phases over two years.

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 Staffing and Budget

FY 2005 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

Cost Avoidance: Technical Architecture Issues: PRISM (current payroll system) runs on IDMS/R, a 1980s architecture database management system that is no longer standard or popular. We have to pay the vendor a high annual fee to run this software (and dozens of associated utilities) on our mainframe. The cost of this is approximately $400,000 per year. PRISM is the largest application that needs to be converted to a standard platform.

Technical Staff Support Issues: IDMS/R requires programmers and analysts with very specialized analytical and programming language knowledge. Today, it is difficult to recruit these 1980s skill sets. IDMS/R also requires specialized DBA (database administrator) skills. The County has only one knowledgeable IDMS DBA employee (the second recently retired). There are very few contract vendors who offer IDMS-skilled programmers, analysts and DBAs. Currently, the County contractual commitment is $300,000. Although contract programmers will be needed to continue the support of the application, the availability of these professionals will increase while the cost of their services will decrease.

Highly Customized System: PRISM was originally a highly customized COTS solution. The County made major customizations to the system to meet "exactly the way the County does human resources business." The challenge today is that future modifications are very expensive to implement (major custom programming that cuts across hundreds of programs). 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.

Improved Functionality for Users: 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.

IT0047 UPGRADE COMMODITY SERVICE CODES

Project Description

This project will automate the Department of Purchasing and Supply Management vendor registration process and provide the County and Fairfax County Public Schools (FCPS) with a Web-based online bidding system (e-bidding). The automated vendor registration system will employ a universally recognized commodity/service code (the National Institute of Governmental Purchasing (NIGP) Commodity/Service Code or equivalent) to profile vendors and replace the outdated and proprietary Fairfax County Identification Number (FCIN) stock numbering scheme. The system will allow vendors to self-register and self-maintain their vendor record. The e-bidding capability will promulgate County/FCPS bid opportunities directly to duly registered vendors and advertise the opportunities on the Internet. The e-bidding system will also allow interested vendors to obtain detailed specifications and terms and conditions electronically and to submit secure electronic bids.

Once totally implemented, this new e-bidding and vendor registration system, with the new commodity/service code as its backbone, will allow fast effective communications with all registered vendors on a much broader range of bid opportunities. The new system will level the playing field for small vendors that do not have a sales force and therefore experience difficulty identifying bid opportunities. Predictions are that for some categories of County/FCPS requirements competition will increase at least threefold.

Project Goals

This project will automate the totally manual processes that the County currently uses to send notices of solicitations to registered vendors, issue solicitations, and receive bids. The e-bidding system will operate 24x7. The project will provide the vendor community with a Web-based 24x7 vendor registration service where vendors will be able to provide and maintain their contact information and information pertinent to the goods and services that they are prepared to sell to the County/FCPS. For the purposes of vendor registration and bid promulgation, the project will replace the "internally developed" stock numbering system currently used by both the County and FCPS with an off-the-shelf, centrally maintained and internationally recognized commodity/service code.

Progress to Date

FCIN File Purge. Initial analysis of the 96,000 plus FCINs in CASPS files revealed that approximately 60,000 FCINs were not in use and had not been used for over a year. Therefore, the project plan was modified to include a purge of the unused FCINs from the CASPS files. DIT developed a routine to purge the FCIN file and the file was successfully purged March 3, 2001, and annually since then. As of February 15, 2004, there are 36,500 FCINs in the file.

Source Selection. Continued analysis and market research of potential commodity/service codes revealed that use of universal commodity/service codes for bid promulgation and vendor registration could be obtained via a contractual relationship with one of several national e-bidding services including the Commonwealth of Virginia's electronic procurement portal (eVA). Thus, the project was redirected to gain the benefits of a new more powerful commodity/service code by utilizing an e-bidding and vendor registration service that would provide a new commodity/service code and much more. Further investigation of eVA and available contract sources concluded that eVA was the best alternative

Use of eVA Approved. The Fairfax County Small Business Commission (SBC) officially endorsed DPSM's participation in eVA in its November, 2002 meeting and the County Board of Supervisors gave its consent February 10, 2003.

eVA Functions Selected. In March 2003 DPSM met with representatives from the State Department of Purchasing and Supply and decided to use the following eVA functions: vendor registration, solicitation advertising, Quick Quote, e-Mall, and when available e-Procurement and reverse auction.

FCIN to NIGP Cross-reference Developed. In July, 2003 DPSM developed an automated cross-reference between the FCIN file and the NIGP Commodity/ Service Codes used by eVA. A printed book of the NIGP codes used by eVA was produced in November, 2003.

Vendors Registered. From May to September 2003 DPSM announced via several direct written communications with over 9,000 vendors registered on the County Master Bidders List our intention to cease using our bidders list and to transition to using the eVA bidders list. The communiqués encouraged the vendors to register with eVA. As of February 2, 2004, 3071 vendors from the former Master Bidders List have registered with eVA. DPSM no longer registers vendors in its former registration database.

Pilot Program Commenced. In October, 2003 DPSM commenced an eVA Pilot Program with the Police Department to test the eVA functionality and develop policies and procedures suitable for countywide use of eVA. Police Department user and selected County users were trained and empowered to use eVA.

Milestones

- *Begin publishing solicitations via eVA, February 2004*
- *Begin using eVA to generate "Bidders Lists" and send Notices of Solicitation, February 2004*
- *Revise policies and procedures, April 2004*
- *Publish policies and procedures, June 2004*
- *Design system interfaces and cross-reference files, July 2004*
- *Train additional staff and implement eVA countywide, August 2004*
- *Expand the use of the Quick Quote system and the e-Mall, September 2004*
- *Develop system interfaces and cross-reference files, October 2004*

Project Staffing and Budget

Project funds in the amount of $84,000 will be used to develop electronic interfaces between the e-bidding and vendor registration system and vendor files maintained on the County mainframe. Additionally a high-level cross-reference table will be built to associate the new commodity/service codes with the FCINs and a letter and workshop based promotional campaign will be conducted to educate vendor and County users. Because eVA is a fully operational electronic procurement portal service, minimal County staff will be required to support the project and no infrastructure requirements are envisioned.

Return on Investment

The project will eliminate manual processes for registering vendors to include profiling vendors against the commodity/ service code, collecting small minority business classification data, and maintaining vendor contact information. The project will replace current procedures for placing solicitations on the Internet, sending notices of solicitations to registered vendors, receiving and tabulating bids, and notifying competing vendors of awards.

Cost Savings:

- Eliminates vendor registration effort. Currently an Administrative Assistant IV (S-17) is dedicated full time to registering vendors and processing changes to the vendor files. Preliminary estimates are that at least 50% of the Administrative Assistant's time will be freed up by the new vendor registration service. {*Savings will be $40,000 x 50% = $20,000*}
- Replaces manual bidding processes. *Cost of printing and mailing notices of solicitations will be eliminated.* {*Savings = $25,000*}
- Replaces current effort to tabulate bids. *An estimated 20% of two Assistant Buyers (S-14) time is dedicated to preparing bid tabulations. This effort will be eliminated* {*2 x $36,000 x 20% = $14,000*}

Total Annual Estimated Savings = $59,000

Non-Quantifiable Benefits:

- Universal commodity/service code more accurately defines vendor products and services for solicitation purposes and allows more refined discrete bidders' mailing lists.
- Online Web-based 24x7 vendor registration extends accessibility of vendor registration.
- E-bidding system operating 24x7 levels competitive playing field and increases competition.

3.4 TECHNOLOGY INFRASTRUCTURE

IT0031 WINDOWS 2003 SERVER UPGRADE

Project Description

Windows Server 2003 is the next step forward in the evolution of the Windows Server computing platform. 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 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.

Milestones

It is anticipated that the Windows 2003 Server migration project will begin on July 1, 2004 and will be completed by Feb 28, 2005.

- *Procure the necessary contractor services to assist with the project planning and operating system software deployments, July, 2004*
- *Research and evaluate the latest release of the Windows 2003 Server operating system to determine which revision of the product will be deployed, July, 2004*
- *Survey all County agencies to determine final server inventories and which servers will need upgrading, assess inappropriate times for the agency's migration, and determine the number of technical staff for the agency, August 2004*
- *Procure the Windows 2003 Server software licenses, August 2004*
- *Evaluate and determine the best methodology for installing and migrating servers to Windows 2003 Server, August 2004*
- *Develop and implement the communications strategy between the project staff and the agency technical staff to disseminate the project information to the agencies, September 2004*
- *Develop and finalize planning and deployment schedule, September 2004*
- *Begin agency migrations to Windows 2003 Server, February 2005*

Progress to Date

This project will formally start in FY 2005. Preliminary planning and training for technical staff started in early CY 2004. It is estimated that this project will take about one year to eighteen months complete migration of all servers (approx 320 servers) in the environment.

Project Staffing and Budget

FY 2005 funding of $607,400 will support a County-wide migration of Windows 2003 Server. Covering the hardware as needed, software licenses, and consultant services necessary to migrate the County's LAN servers to Windows 2003 Server.

Return on Investment

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.

IT0041.1 AUTOMATED TELECOMMUNICATIONS MANAGEMENT SYSTEM (ATMS) REPLACEMENT

Project Description

The County has implemented a new Automated Telecommunications Management System (ATMS) called NetPlus from ACEComm. This new software includes not only full billing capability, but also cable/wire management, support for multiple switch vendors, strong analytical capabilities and management of both voice and data circuits. The new software also supports the requirements identified as critical for the implementation and management of the County's new fiber-based I-Net, which requires new billing and circuit management procedures needed to track, measure and bill elements of an integrated voice, data and video network that will be comprised of both internal and public components. The new application allows for the close integration of wiring data with physical location through linkage to the CAD space files maintained by Facilities Management Division (FMD). This will allow space planners and network/telecommunications analysts to work from the drawings with accurate and revisable information. This software takes advantage of the capabilities of the latest voice and data equipment and allows customer-level access to billing information via Web browsers and the Intranet. It also provides sophisticated wire and circuit management tools and can output data collected (via ODBC) to the desktop computer applications (Word, Access, Excel, etc.) used throughout the County. This new product runs on Unix-based servers and utilizes the County's standard Oracle database.

The County continues to manage its large telephone switches and both local and long distance telecommunications billing using a DOS-based program last updated in 1994. The Automated Telecommunications

Management System (ATMS) is a text-based, proprietary and very "user unfriendly" application that cannot be customized to meet new County telecommunications requirements. The application vendor has replaced ATMS with a Microsoft NT-based client/server product. Future support and development efforts will be limited to the new application.

Project Goals

The system is capable of providing real-time fraud detection and network management (via Simple Network Management Protocol/SNMP) capability. User names and telephone extension information can be synchronized via Microsoft's Active Directory to the Exchange Server for automated telephone directory management and the development of a County-wide unified messaging platform.

The current ATMS application lacks key functions that prevent Telecommunications Services from managing its resources effectively. These include no cable/wire management, lack of support for multiple switch vendors, limited analytical capabilities and management of voice circuits only. This product does not support the requirements already identified as critical for the implementation and management of the County's new fiber-based I-Net. New billing and circuit management procedures will be needed to track, measure and bill elements of an integrated voice, data and video network that will be comprised of both internal and public components. With increasingly sophisticated voice and data systems at a larger number of County sites, automating the collection and analysis of data and billing information will become even more cost-effective. Cable and outlet management is becoming increasingly critical as the number of ports continues to rise and multiple (and constantly changing) vendors install and maintain voice and data wiring. Even more important is the future utilization of the same cable plant to carry voice, data and video signals. Newer applications allow the close integration of wiring data with physical location through linkage to the CAD space files maintained by Facilities Management Division (FMD). This will allow space planners and network/telecommunications analysts to work from the drawings with accurate and revisable information.

Progress to Date

This project is complete. The software selected via an open procurement was the NetPlus application from ACEComm. Overall cost for the new ATMS was minimized through use of an existing Sun Solaris server and the existing SAN, a high-capacity storage and backup system.

Milestones

- *Request for Proposals (RFP) issued to acquire a new ATMS system, November 2003*
- *Contract award, April 2003*
- *System implementation, October 2003*
- *Full production, May 2004*

Project Staffing and Budget

FY 2003 funding in the amount of $353,000 was carried over for system acquisition and contractor costs. No additional funding is required for FY 05. Temporary staff may be used for data conversion and entry of historical records used for long-term analysis.

Return on Investment

The benefits derived from the implementation of this project include: the ability of the County to better manage its telecommunications resources (cable plant, hardware inventory, CDR), the reduction of work order turnaround time by allowing professional staff to spend less time entering and retrieving complex data elements, more efficient and effective billing analysis, as well as the detection of any fraud or abuse of the County's telephony system.

IT0050 PUBLIC SERVICE COMMUNICATIONS REPLACEMENT

Project Description

This project consists of the design, installation, and implementation of a new radio system to replace the current 1980s-era system in use for non-public safety agencies (Public Works, Park Authority, Schools Transportation, Water Authority, FASTRAN, etc.). A consultant study recommended that the current system not be upgraded (as was the original project intent), but instead that the entire system be replaced with a network of six transmitter locations (as opposed to the current two). In addition, the new system will also provide for backup radio communications for the public safety agencies (Police, Fire and Rescue departments, and Sheriff's office).

Project Goals

The new radio system will eliminate a severe geographical coverage problem for County agencies, and provide reliable communications for an expanded County fleet and 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.

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, 2004*
- *Site Preparation, 2004*
- *Network Equipment Installation, 2004*
- *Reliability and Functional Testing, 2004*
- *System Acceptance, 2004*
- *Procurement and installation of more than 3,600 new mobile and portable radios, to replace current customer units, will commence in FY 2004. Full implementation is projected to be completed by December, 2004*

Project Staffing and Budget

The FY 2005 project cost is estimated at $4,644,762 which includes both infrastructure costs and, based on a staggered implementation schedule, the purchase of half of the required radios. Funding of $1,039,986 will continue to support the seven year lease-purchase replacement of the current radio system infrastructure, including the increase of radio repeater locations from two to seven sites, to ensure greater than ninety percent call coverage. In addition, this will eliminate the two 'zones' within the County and provide for seamless coverage on one system regardless of location, as well as provide ample reserve capacity for peak use periods and future fleet expansion. The remaining $3,604,776 will be used to replace the remaining half of more than 3,000 mobile and portable radios in FY 2005.

Return on Investment

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. 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. In addition, 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. Also, 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 itself.

IT0058 REMOTE ACCESS

Project Description

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.

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 completion, March 2005*

Project Staffing and Budget

FY 2005 funding of $150,000 will support the procurement of Citrix, Microsoft Licenses and Citrix consultant services. FY 2005 funding for these projects is estimated below:

- Software *(Citrix/Microsoft)* License, ... $50,000
- Hardware *(Thin Client Terminals)* $50,000
- Consultant Services $50,000

Return on Investment

This project provides a cost effective approach to enhance the County's PC infrastructure to offer a flexible choice of types of end-user terminals for county business units. 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, and ensure timely access to business assets through an authenticated identification process. This solution addresses multiple regulations with minimum resources by implementing and measuring compliance through automated analysis.

IT0060 TELECOMMUNICATIONS VOICE NETWORK INFRASTRUCTURE

Project Description

This is a new project for FY 2005. The Voice Network Modernization project's focus is on replacing the aging telephone network currently in use in Fairfax County. Presently, the County relies on a telephone network based on outdated 1980s technology and equipment for its communications needs. More than 15 different models of Private Branch Exchanges (PBXs), analog and digital multi-line telephones (Key Systems), Verizon provided Centrex, and single-line telephones (POTS) serve as the County's voice communications network. Replacing the County's network of disparate technologies with a voice infrastructure platform based on current technology and full integration into the Institutional Network (I-NET), are required to 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.

Modernization of the County's telecommunications (Telephony) network is by necessity an ongoing and evolving process. As industry standards mature and internetworking requirements change, the telephone communications network's capacity and configuration must do so as well.

Project Goals

The strategic goals of this project is to move the County towards a strategic voice solution that will use voice over IP by first implementing an "Enterprise-Class" voice platform that provides expandable IP technology options, future-proofing, yet maintains 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 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. These goals framed the creation of Fairfax County's Strategic Voice Technology Plan.

- Optimize the total life cycle cost for voice services across the County Government.
- Provide countywide common voice architecture.
- Provide remote technology network access for voice and data to expand telecommuting.
- Provide compatibility with "best-in-class" citizen access technologies and processes.
- Develop a "survivable" architecture that is scalable.
- Convergence of voice and data onto one network.

Progress to Date

This will be a new project commencing in FY 2005 with needs analysis, and solicitation and selection of a solution.

Milestones

- *Network analysis and engineering begin, July 2004.*
- *RFP release, July 2005*
- *Bid evaluation, October 2005*
- *Contract award, December 2006*
- *Massey "Core" Switch installation begin, April 2006*
- *Government Center "Core" Switch installation begin, October 2006*
- *I-Net integration, January 2007*
- *Medium and Small/Tiny sized sites installation begin, April 2007*

Project Staffing and Budget

FY 2005 funding in the amount of $600,000 will be used for telephony network engineering and contractor costs. The prime engineering contractor and any necessary subcontractors have not been identified. Additional funding for the technology and implementation are anticipated for subsequent fiscal cycles.

Return on Investment

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 off-net calls; and a reduction in overall maintenance costs, including Moves/Adds/Changes. In addition, the new voice infrastructure will allow Fairfax County to leverage imbedded technology assets and to improve service delivery quality. Business processes will be streamlined because of the ability to share information over an integrated communications platform. Further, the new telephone network will give County employees the right technology based business tools at the right time.

- Reduced operational and maintenance costs through the implementation of newer telecommunication technologies.
- Improved reliability and increased capacity to support current and future applications and provide improved and faster flow of information among County agencies.
- Improved service levels to the public by giving County employees the capability to more expeditiously extract information to fulfill citizen's requests.
- Increased public satisfaction with government services and increased attractiveness of Fairfax County by fulfilling constituent inquiries or transactions through a high-speed network.
- Increased staff productivity, enhanced customer contact and new value added services provided at a lower cost.

IT0061 IT SECURITY

Project Description

This project supports several technology initiatives for on going improvements to the County's security architecture. These are designed to provide an appropriate level of protection for all County information processing resources regardless of technology platform. Further it supports new federal and state legislative requirements for ensuring the privacy and confidentiality of information in an evolving environment, and facilitating e-government and remote access transactions. The latest best practice technologies will be employed to meet current and future security challenges.

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. The county uses Netegrity, which will be further used on web based platforms to authenticate users whenever there is a need to read data which is protected due to business or privacy requirements or modify and/or enter data which could seriously affect the County's business interests.

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. 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. provided to implement a countywide security monitoring and audit control process. 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.

Improved audit controls will protect the integrity and sensitivity control on the information contained within the County's technology infrastructure. This solution will provide security analysts and managers with advanced tools to proactively build and measure comprehensive security best practices within agencies and across the County. This software suite will also assist in the automation of the creation and control of business and IT policies implement industry-mandated compliance initiatives (i.e. HIPAA) and allow auditors and security staff the ability to manage and monitor acceptance among designated departments, personnel and their information technology systems. The County will automatically be able to measure compliance against industry-standards at any time, creating an "audit on-demand" capability against a variety of security standards and regulations (including HIPAA) which is not readily accessible today. This product will increase security, simplify management, speed reporting and data analysis, and provide critical data for improved auditing and forensic analysis.

Milestones

Work associated with planning and design is started. The three technologies are anticipated to be implemented in phases based on business function priorities, legal mandates and aligned e-business projects.

Project Staffing and Budget

IT security and infrastructure staff are being assisted by consultants that are already augmenting staff and currently engaged in on-going network infrastructure improvements. FY 2005 funding for these projects is estimated below:

- $534,667 for modular firewall architecture enhancements and implementation;
- $326,000 for secure authentication technology and implementation;
- $400,000 for security monitoring tools and software.

Return on Investment

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. 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.

3.5 HUMAN SERVICES

IT0002 HUMAN SERVICES INFORMATION SYSTEMS

Project Description

The Harmony Information System (VUWRS replacement) is currently a combination of a client-server based application and web based application, both of which access a single Oracle database. In FY 2000, the client server application was implemented to allow child and adult program areas to purchase and pay for services to clients. In FY 2003, a web-based module to the Harmony Information System was implemented to automate case management for Adult Services programs. All of the current and planned Harmony system components meet the County standards for system architecture.

The scope of the workflow projects was modified in FY 2003 to include development of an Intranet based Contracts Management application. The first phase of the Contracts system was completed in FY 2003. This system, developed primarily in house by County staff, automates the workflow for the myriad documentation associated with Human Services' goods and services requests. In FY 2004, the system was expanded to integrate contract management activities for the Comprehensive Services Act (CSA) program, and to integrate invoice and payment information from the County's financial system, and from the Web-based vendor invoicing system.

Project Goals

The initial goals of this project have been achieved or have been redirected based on new technology alternatives. Beginning in FY 2004 through FY 2005, the County will build upon the success of these initiatives to further improve service delivery and cost savings in human services programs and administrative areas. The status and plans for each of these projects is described in more detail in the Progress to Date section.

This project began in FY1999 to meet three distinct IT initiatives:

1. Replace the existing state-supplied VUWRS system with a COTS package to enhance case management and client purchased service processing for child and adult programs;
2. Develop a workflow system to allow electronic movement of documents and data along identified and agreed upon paths; and
3. Develop an integrated database architecture to query aggregated data from multiple human services systems.

The technology goals originally envisioned in the decision support system have been revised by enhancement opportunities brought on by new technologies that allow

for the integration of data without the construction of a separate database. As a result, new technical and business goals were defined to achieve improved data integration and reporting. These new directions were outlined in a comprehensive Human Services' Strategic IT Plan. Both the Department of Information Technology and Human Services staff are currently collaborating on a number of pilot projects for improved data sharing and integration for all Human Services agencies as defined through the goals and strategies in the Strategic IT Plan. The original DSS project, therefore, has been revised and replaced in favor of these new directions, and are currently being pursued through internal resources and county-wide software solutions procured through the Department of Information Technology.

All initiatives support our ongoing goals to improve service delivery through shared data and service planning. Users of these new systems include six of the eight Human Services agencies, who are now able to share information when appropriate, aggregate program data, and provide improved spending management and accountability for child and adult programs. Recent implementations have also allowed front-line client support staff to electronically track and maintain critical case management data, and provide improved control over access to client records. The complete migration to Web Harmony, along with other planned enhancements, will eliminate old non-standard database systems, and promote further integration of client data through expanded user base, and improved remote processing. Contracts Management staff will be able to better execute requests for goods and services through an Internet-based application.

Progress to Date / Milestones

Initiative 1 — Client Contract Spending (VUWRS REPLACEMENT): The new module for Adult Services case management was implemented in phases in May 2003 and August 2003. Remaining phases for FY 2004 - 2005 include:

- *Complete Adult services module implementation, April 2004*
- *Migrate current client server users to Web system beginning, May 2004*
- *Expand use of web-based modules to other adult and child programs, April through September 2004*
- *Complete interfaces and reporting enhancements, December 2004*

Initiative 2 — Workflow Management: The first phase of the contracts management workflow application was completed in FY 2003. Phase II was implemented in January 2004. Requirements analysis and design for the final phase is scheduled to begin in March 2004.

Project Staffing and Budget

FY 2004 funding of $200,000 plus prior year carryover funds will be used to support the Client Contract Spending System and provide for contractor support from the existing vendor, Harmony Systems, Inc. This project will be completed in FY 2005 and no additional funds are requested in FY 2005. Additional prior years funding of $132,000 will be used to support workflow management improvements by providing contractor support for the web based vendor invoicing system (WebR), and for Harmony Information Systems to integrate contracts requirements into current CSA program processing in Harmony. Count staff requirements are estimated as follows:

Return on Investment

Cost savings will result from paying the annual license fees for a single application instead of two separate applications since all users will be using the same application on one consistent platform. Moving to a single application will also reduce the amount of time and effort involved in releasing new versions that need to be installed on each user desktop, which can take several days or weeks to complete. It is projected that the agency will save an average of 40 hours a month for at least one System Administrator and various staff members involved in troubleshooting version software conflict issues.

Providing timely information to managers who are involved in the CSA program is critical. This is a program that is facing increasing scrutiny and budget reductions from the Virginia Department of Social Services. With the WEB Harmony application, staff from the Public Schools and other agencies can review their information directly, enabling an enhanced review process so that potential costs can be avoided. In addition, the WEB based application has a reporting functionality using Crystal Reports that will allow staff to customize their own reports so that greater access to the needed data is available.

It is estimated that staff at Congregate Meals spend an average of 10 to 15 hours per month preparing the necessary paper reports which are then forwarded to the Human Services Administrative services to be summarized and prepared for transmission to the State.

It is estimated that administrative staff spend a minimum of 20 hours per month synthesizing the Congregate Meals data, and reconciling it to other manual reports and bank deposits. Additional time is required when a special request for program data is required.

The County's Return on Investment for the Workflow Management component will be realized in the following areas:

- Data entry for CSA contracts can be reduced by an estimated 15 minutes per contract.
- Program staff will no longer need to spend time hunting down paper or calling contracts to get status of procurement requests — status will be available on-line.
- Requests will be automatically routed to supervisors for approval and to contracts management or procurement for processing.
- Contracts staff will be able to respond to vendor inquiries for payment status more quickly.
- Contracts staff will have analytical data and reports on workload and efficiency of staff.
- Vendors who provide services can be evaluated on-line for their proficiency in service delivery and compliance with contract stipulations.
- Vendors who provide specific services can be located on-line through the search features.
- Systems on old platforms can be retired.
- Internal technical staff can develop much-needed skills in web based application development and support.
- The Oracle database platform allows us to contemplate future consolidation of systems that all store vendor information.

IT0002.6 ATHLETIC FACILITIES SCHEDULING SYSTEM (ON-LINE REGISTRATION)

Project Description

The purpose of this project is to ease the burden on the public for applying to use Fairfax County public athletic facilities. 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.

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; make payments online (Credit Card acceptance). Guest users (general public) will have the ability to submit applications online.

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. If this process is automated, then staff would 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.

Currently, citizens applying for community use of athletic facilities have a substantial amount of documentation that they must complete and submit, completing new copies of the same forms each season of each year that they use facilities. With the automation of this process, citizens will be able to pull up their past applications on the screen, make any necessary changes, and then submit them. Included in this system would be the ability for community organizations to submit their team rosters, including names and addresses for players. Roster verification is part of the scheduling process and is

used to identify whether an organization or team meets the Allocation Policy requirements for minimum percentage of Fairfax County resident players.

Progress to Date

This project is Phase II of the AFSS, and will use the existing vendor for the Athletic Facilities Scheduling System, Xybernaut Solutions Inc., to develop and implement the system. The AFSS system has completed design and implementation, meeting schedule requirements for deliverables. Some enhancements are anticipated in FY 2004 using agency funds. In Phase II FY 2005, the following process will begin with all preliminary testing performed using the existing AFSS testing and training server to protect the production server.

Milestones

- *Amendment of existing contract, July 2004*
- *Detailed requirements analysis, July 2004*
- *Development of the logical design, August 2004*
- *Development of the physical design, August 2004*
- *Purchase of additional hardware (one server to sit in the DMZ), September 2004*
- *Development of the software for on-line application processing, September 2004*
- *Testing of the software for on-line application processing, October 2004*
- *Development of the software for roster submission, October 2004*
- *Testing of the software for roster submission, November 2004*
- *Development of the software for payment acceptance, November 2004*
- *Testing of the software for payment acceptance, January 2005*
- *Acceptance Testing of combined modules and their integration with AFSS, February 2005*
- *Training of staff on Phase II modules, March 2005*
- *Sign-off for the on-line application processing, roster submission system, delivery of code, April 2005*

Project Staffing and Budget

Funding of $92,225 for additional contractor services is provided in FY 2005 to complete on-line registration requirements.

Return on Investment

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. Ten to fifteen additional organizations will begin using the system in FY 2005 by the end of calendar year 2004, 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

The following Milestones and dates for implementation are now projected:

- *Pilot organizations begin using the system, January 2004*
- *5-6 additional organizations will begin using the system, May 2004*
- *5-6 additional organizations will begin using the system, August 2004*
- *Remaining CoC HUD grantees will begin using the system, November 2004*
- *Remaining CoC organizations who wish to begin using the system may do so; project complete and moves into maintenance and support phase, January 2005*

Project Staffing and 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 requested for FY 2005.

Return on Investment

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.

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.

This project is currently underway with a signed contract with Creative Socio-Medics, Inc. for 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.

Project Goals

The events of September 11, 2001, and subsequent anthrax/smallpox crisis have highlighted the critical need for public health agencies to have quick access to reliable data from a variety of sources. Public Health experts agree that a key to defending against bioterrorist attacks is early detection and response that hinges on communications and information technology. 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 system upgrades were initially implemented in FY 2003. The interface project component will complete in FY 2005.

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, May 2004*
- *Implementation of AVATAR, July 2004*
- *Develop specifications for electronic billing, April 2004*

Project Staffing and Budget

To acquire the necessary software and consultant services to fully implement this system, $191,433 is funded in FY 2003. Funding of $319,000 for additional contractor services is included in FY 2004 to complete multiple interface requirements.

Return on Investment

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.

IT0054 SYNAPS — FAIRFAX/FALLS CHURCH COMMUNITY SERVICES BOARD

Project Description

This project provides support for on-going the conversion of SYNAPS to a SQL database and the implementation of an Assessment and Treatment Planning (ATP) module. The Health Insurance Portability and Accountability Act (HIPAA) became law in August 1996. HIPAA includes a section called Administrative Simplification (AS). This section is intended to improve the efficiency and effectiveness of healthcare systems. It recognizes the increased risks imposed by the move to electronic transactions. The law calls for compliance with a security standard designed to protect the confidentiality and integrity of health information and the information technology used to store, process and transmit it. The HIPAA-AS provisions cover five distinct areas relating to the handling of health care transactions:

- Electronic data transaction standards;
- Code set standards;

- Standards for unique health identifiers;
- Security standards; and
- Privacy protection.

The security standard requires that all databases containing personal information must be able to support access security. The COTS application SYNAPS was developed using BTREIVE as the database engine, which supports no database security, and according to the vendor there are no plans for enhancements.

The Assessment and Treatment Plan (ATP) module of SYNAPS allows clinical staff to create on-line clinical assessments and treatment plans. Automated client records will be more current and easier to access for routine as well as emergency service delivery. In order to implement this module, staff support and infrastructure improvements are needed. Prior to the implementation of ATP, there was 100 administrative and clinical staff using SYNAPS. With the addition of the ATP module, 700 new users will be added.

Project Goals

The technical goal of this project is to convert the existing COTS application to an industry standard database platform consistent with the County's IT Architecture Standards and provide the level of data base security required by HIPAA. The COTS vendor has converted the application to MS/SQL. DIT has selected SQL as being the best platform for supporting the application, data requirements, and distributed computing environment requirements for a client of Fairfax County's size and scale. The standards platform will facilitate improved connectivity and responsiveness for the application for users of the system at the various CSB locations. This will improve the stability and reliability of connections, improve the integrity of data and reduce data corruption, and increase the speed of access to users to improve the efficiency of data entry.

The business goal of this project is to implement the ATP module, which will facilitate more efficient, faster and responsive service delivery, and increase productivity of program clinicians. Upon completion, the CSB staff will increase from 100 to approximately 800 users serving the majority of the CSB clinics throughout the County.

Progress to Date

The base Anasazi application for billing management was put into production at several sites in prior years. The Assessment module is currently in the final phase and will be completed during FY 2004. The Treatment Planning module is in the final planning stage and will be implemented in FY04, continuing id FY 2005. The conversion of the database platform to SQL will improve the base-line technology for performance and maintainability and keep the COTS package current. Both technical staff and users are currently testing the new module.

Milestones

- *Purchase and install servers, September 2001*
- *Test new product release including ATP forms and pilot on-line forms at program sites, December 2001*
- *Implement ATP at half the CSB sites, March 2002*
- *Implement ATP at remaining CSB sites, June 2002*
- *Test new ATP forms and pilot on-line forms at program sites, April 2002*
- *Train half of the CSB clinical staff in the use of the new ATP forms, October 2002*
- *Train remaining CSB clinical staff in the use of the new ATP forms, March 2003*
- *Test and implement new HIPAA compliant product releases, April 2003*
- *Test SQL release of the application, January 2004*
- *Implement SQL release of the application, March 2004*
- *Begin Implementation of Treatment Planning at selected CSB sites, April 2004*
- *Complete ATP, February 2005.*

Project Staffing and Budget

FY 2002 cost was estimated at $604,000. Reductions from this amount occurred during FY 2003. No additional funding will be allocated in FY 2004. DIT staff will provide support for the technical aspects of this conversion.

Return on Investment (ROI)

Funding of this project will position the County so that the application will comply with HIPAA regulations. These regulations clearly state that all organizations have to be compliant within two years of the release of final regulations in each area. The CSB served over 20,000 clients in FY 2002. Most clients are required by law to have an active treatment plan based on the client assessment. This plan must be reviewed throughout the year in order to maintain compliance with State Code and funding source regulators (e.g., Medicaid). The CSB will be able to avoid costs associated with increasing accountability requirements.

IT0059 CHILD CARE TECHNOLOGY

Project Description

The project scope 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

Business requirements have been defined.

Milestones

- *Requirements Analysis, June 2004*
- *Contract Amendment, August 2004*
- *Analysis/software Requirements, September 2004*
- *Detail Design and Development, November 2004*
- *Acceptance Testing, April 2005*
- *Training, May 2005*
- *Deployment, June 2005*
- *Final Conversion to Production and Support, June 2005*
- *Project Evaluation, July 2005*

Project Staffing and 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.

T0059.1 CHILD CARE WIRELESS TECHNOLOGY

Project Description

Under Chapter 30 of the Fairfax County Code, a person who provides child care in their home on a regular basis is required to meet health, safety, fire and educational standards. Child Care Specialists, from the Office for Children make an initial and annual home inspection to assure that the providers are meeting the standards and to provide them with the appropriate technical assistance to provide quality care for the children. In addition, the Specialists enforce the standards required by the United States Department of Agriculture that allows the providers and the County to receive reimbursements for nutritional meals and snacks served to children.

The project scope 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 familychild 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:

- Reduction in the time for a provider to receive a permit;
- 50% reduction in time it takes for a child care provider to receive USDA eligibility;
- Have real time data information available during home inspections;
- Result in a 60% reduction in paperwork;
- Reduction in reliance on a manual system for issuing permits;
- Improvement in quality of child care by allowing Specialists to spend more time on technical assistance.

Progress to Date

Pilot Project with wireless tablets has been conducted by the Office for Children.

Milestones

- *Evaluation of Available Hardware*
- *System Design*
- *Formal Proposal for Software*
- *Contract Execution*
- *Initial Hardware Procurement*
- *Software Installation and Testing*
- *Training*
- *Reliability and Functional Testing*
- *Acceptance*
- *Project Evaluation*

Project Staffing and 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.

Return on Investment

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.

3.6 PLANNING AND DEVELOPMENT

IT0003 PAMS REPLACEMENT/LDSNET UPDATE

Project Description

This project consists of two Land Planning and Development functional areas: the total replacement of the legacy Plans and Agreements Monitoring System (PAMS) and the enhancement of the Land Development System Internet (LDSnet) application. Both projects are utilizing the Land Development System (LDS) relational database and therefore will be closely linked as development proceeds.

A portion of PAMS was replaced in FY 2000 with the client server application, the Plans and Waivers System (PAWS). Since that time, information on some development plans is captured in PAWS while the remainder of the information is captured and processed in PAMS. This has resulted in the Department of Public Works and Environmental Services (DPWES) staff having to use two systems to enter and retrieve information that is closely related. It has also meant that the Department of Information Technology (DIT) has been providing maintenance support to both systems along with a daily transfer of data between the two. There are also multiple support access databases whose information and functionality will be consolidated into PAWS as a part of this project.

This project will move the remainder of the development plan types, waivers and bonding functions, information to PAWS. This will permit the users to operate out of a single unified system and will permit the data to be stored and related in a single database for ease in reporting and query for County staff and managers as well as the public. The LDS database is the single central repository of land development data and supports the Zoning and Planning System (ZAPS), PAWS and LDSnet. By housing the additional data, LDS will contain detailed information on the development process from zoning action through occupancy and bond release. County location information such as tax map numbers, zoning districts and land use data are being automatically updated into LDS to ensure the accurate accounting of land development. The information will also be used to populate the County's Geographic Information System as well as interface with the Tax Administration system and other existing systems in the County.

The LDSnet project consists of three elements: upgrading the existing unsupported software to a vendor supported software that is consistent with the County's architecture platform, creating an internet login process for development plans, and enabling outside agencies to automatically update plan review information without the delay of paper deliveries.

LDSnet was designed as a search and query tool. In response to industry requests, LDSnet will be "opened" to allow registered firms to enter and transmit information to the County to alleviate the entry of plan information by County staff. This will prevent a backlog of data entry tasks by the County and allow staff to concentrate on the processing and review of plan information. The ability of review agencies to directly enter review information into LDSnet will eliminate the delay of the paper deliveries and second party data entry, creating a more efficient review process.

Project Goals

The primary goal of the PAMS Replacement project is to provide a single system for tracking site development related plans, waivers and bonds. This system will use technology that promotes data sharing and public access. PAMS will be incorporated into PAWS and LDSnet.

The primary goal of the LDSnet Update project is to allow update access from outside entities on land development plan information. A secondary goal is to upgrade the application software to comply with County standards and vendor support.

Progress to Date

LDSnet architecture (application and operating system software) redesign and implementation tasks have been completed. System programming tasks required to meet business functional requirements were completed in FY 2004. A CITRIX solution will be implemented in FY 2004 to enable review agencies and industry to update PAWS directly without DPWES staff intervention.

The system/data design and detail design specifications Milestones for the PAMS replacement project are completed. Coding, test plans, data migration and other system development activities began in the fourth

quarter of FY 2003 and are scheduled for completion in FY 2004 with implementation occurring in early FY 2005.

Milestones

Milestones for both projects include the systems/data design, detail design, the actual construction of the system, and the development of a test plan, testing, training, system acceptance and installation. PAMS Replacement will also include migration of data from other systems, and integration with ZAPS. The deliverables include the following:

- *Detail design specifications, December 2003*
- *Migration scrubbing, data mapping, March 2004*
- *System/data design (including screen designs), April 2004*
- *Actual code, April 2004*
- *Migration specifications and code, May 2004*
- *Integration data mapping and integration code, June 2004*
- *User's manuals, training materials, September 2004*
- *System acceptance, September 2004*
- *Migration testing, October 2004*
- *Test plans, October 2004*
- *Migration and integration runs, October 2004*

Project Staffing and Budget

Staff from DIT, DPWES, and DPZ will be required. Funding of $2,155,000 was budgeted for the PAMS Replacement for this project in FY 2004. A total of $149,621 was budgeted for the LDSnet. Both of the project costs include consultant, hardware, and software and training costs. Funding of $402,674 is provided in FY 2005 to complete this project.

Return on Investment

The benefits of PAMS Replacement and LDSnet are aimed at providing the public with greater access to information and organizing the information for faster more efficient retrieval. No longer will customers and staff have to go to many sources to pull together information costing time and money. The information will now be entered into a single location and linked in many different ways to assist in research tasks and daily plan processing functions.

By accommodating the activities of the Bonds and Agreements process, waivers and the grading plan process within the PAWS system and consolidating the various stand-alone database systems currently in use, staff's response time in performing routine search and retrieval activities will be decreased, improving response time and enhancing customer satisfaction. Implementation of this project is expected to also decrease significantly the number of phone inquiries directed at staff as the development community will have the ability to query on a variety of bonding and grading plan information using LDSnet.

The additional efficiency afforded the Bonds and Agreements staff as a result of the implementation of this project will allow greater attention to be devoted to managing the millions of dollars held in escrow accounts for future improvements as well as resolving bond default issues. The system will also provide a more consistent and efficient means to track and enforce proffered improvements and monetary contributions. Consolidating all the activities of the Plan and Document Control staff under a single database system will enhance the process of data input and retrieval allowing for faster more accurate logging and tracking of grading plans. Expanding the type and amount of data captured for individual grading plans will allow the agency to be more responsive to customers as well as to provide a concise source of engineering information relative to individual grading plans.

Staff will function with greater efficiency as a result of operating from one database opposed to the several separate databases currently in use. By linking data already held in LDS, redundant data will be eliminated resulting in faster processing time for plan submissions. This program will provide enhanced capabilities in both data input and retrieval that will directly result in better service to the agency's customers. By providing the customer direct access to bonding and grading plan information 24 hours a day, seven days a week through LDSnet, communication between the development community, the public and staff will be improved. Including both the Bonds and Agreements and the Grading Plan components within the PAWS system will allow managers to take advantage of the report and query capabilities within PAWS to better evaluate workload and productivity. The report and query functionality will also provide the means to track relationships between applicant, developer and plan submission as well as to better monitor compliance with proffered improvements and monetary contributions.

IT0055 FIDO — FAIRFAX INSPECTIONS DATABASE ONLINE (Formerly ISIS Replacement Project)

Project Description

The Fairfax Inspections Database Online project (FIDO) replaces the legacy Inspection Services Information System (ISIS) in the Office of Building Code Services (OBCS) at the Department of Public Works and Environmental Services (DPWES), multiple MS Access databases in the Fire Prevention Division at the Fire and Rescue Department (FRD), the existing Complaints Tracking System used by the Zoning Enforcement Branch (ZEB) at the Department of Planning and Zoning (DPZ), several legacy systems in the Environmental Health Section of the Health Department, and will consolidate the issuance of Use Permits (both Residential Use Permits and Non-Residential Use Permits) into a single system. The goal of the FIDO Project is to provide a single database solution that meets the needs of the involved agencies in their shared and similar processes. The new system will be integrated with the Land Development System (LDS) to provide a more seamless process throughout the lifecycle of development and construction projects.

The FIDO Project provides a foundation for future e-government applications related to land development and building construction and are integral to the County's effort to re-automate 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 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, and more predictable. The replacement 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.

The initial phase of the FIDO implementation is in production, replacing the old Complaints Tracking System used by DPZ staff and inspectors in investigating citizen complaints regarding alleged violations of the Zoning and Noise Ordinances. The new system will also enable the Environmental Health Section of the Health Department to share the same database for their complaints management processes and will allow the agencies to. The new system will also improve the decision-making process by taking advantage of enhanced analysis and available information, to share information with various agencies (including the Board of Supervisors' offices), to enhance customer service, and to reduce work overlap.

Project Goals

The primary technology goals for the FIDO/ISIS replacement project are to move from the mainframe environment to a platform that enhances multi-agency access and participation in the process, and to facilitate conducting as much business as possible via the Internet. These goals include automating and incorporating similar manual functions performed by the Fire Prevention Division and the Environmental Health Section that are not available on the current mainframe environment. 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 direct access to permitting process and data.

The primary technology goal for the Complaints Management System replaced the outdated Paradox complaint tracking system used by DPZ. 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 FIDO Project is a continuing project. During the earliest phases of this project, a concerted effort was made to harness the expertise of all stakeholders in developing the system requirements. In FY 2003, the project Steering Committee and multiple cross-agency workgroups met regularly to provide guidance and to assist in identifying and developing system requirements. 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. to procure an appropriate permitting and complaints management system that fits well into the County's e-government strategy. The efforts over this past year have concentrated on implementation of the Complaints Management Module for DPZ and the Contractor Licensing Module for DPWES and the Health Department.

The project continues in FY 2005. The deliverables will include system documentation; test plans; migration data scrubbing, migration data mapping, migration specifications and code, migration testing; integration data mapping, integration design code, integration testing; User's Manuals; system acceptance; training materials; and phased installation of the system modules (including final migration and integration runs). Limited parallel usage is optional and the duration, if any, will be determined by the user agencies. All of these steps may not be required for each module.

The architecture for the system will be compatible with the existing LDS client/server architecture, which includes an Oracle database. All hardware and software will be consistent with County standards.

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 and Fire Prevention Modules (Phase 3), February 2004*
- *Migration of existing Permit and Inspections data to the new system, October 2004*
- *Integration of the new system with the LDS database, December 2004*
- *Design and Installation of Dynamic PORTAL for Permits and Inspections, January 2005*
- *System Testing, throughout lifecycle of project*
- *User training and system administrator training Phases 1-3, July 2003 – March 2005*
- *Final System acceptance and implementation, April 2005*

Project Staffing and Budget

Staff from the Department of Information Technology, DPWES, FRD, DPZ and the Health Department will be required. A total of 2,832,005 was funded for this project in FY 2002 and carried over into FY 2003. In FY 2003, $88,000 was funded for the Complaints Management module for the Department of Planning and Zoning. An additional $874,000 has been included in FY 2004 to complete the ISIS replacement project. The total project estimate is $3,794,005, including consultant, hardware and software upgrades, remote access devices, and training. Future maintenance costs are not included in this estimate. $1,787,759 is added in FY 2005 to continue the project.

Return on Investment

Funding the ISIS replacement portion of this project allows the County to achieve a Return on Investment in several areas. Cost savings will be realized through a streamlined system that will enable industry to work more productively within the County. The industry will recognize significant savings from operating costs presently incurred due to delays in construction and occupancy or use of buildings. Increasing the speed in

which buildings are processed through the current system and brought to completion will enhance the revenue stream and in turn the tax revenue base. A streamlined web-enabled system will help OBCS become less susceptible to costs associated with changes in staffing levels required by market swings in the economy and will enhance management's ability to absorb the fluctuations that have historically plagued the industry. The need to hire staff to train new permit technicians will diminish, as the time required for training is reduced. The new web-enabled system will reduce costs associated with printing, storing, and archiving of paper applications, forms, and plans. Automation in the Fire Prevention Division will enable personnel to become more efficient in the performance of their duties, thereby increasing their availability to perform inspections and reducing the need for additional personnel as workload increases. An integrated database solution will reduce some of the support requirements currently in place between DPWES and FRD.

The replacement of ISIS is also necessary to create a platform for future e-permitting initiatives that may more directly enhance revenue (e.g. charges for access to data, charges for enhanced optional services, etc.) Additionally, the e-permitting portion of this project has garnered national attention and may result in the availability of national funds and grants for future applications if the County has a permitting platform on which new technology can be implemented.

Increased efficiencies in the process will result in many indirect and non-quantifiable revenue enhancements as well:

- Permit process customers will have more access to, and control of, the permit review process;
- Construction process will be perceived as being more business friendly and will attract additional businesses to bolster the tax base;
- An improved and simplified process will encourage people to obtain the required permits and will increase code compliance and the safety of structures (less illegal non-permitted activities requiring enforcement action);
- Information given to permit process customers will be more complete, accurate and timely, thus reducing or eliminating the need for multiple resubmission of plans and applications;
- Implementation of State-mandated code changes will be more timely and efficient;
- Reduction of paper forms and improved legibility of recorded comments will reduce costly errors;
- Communication between plan reviewers and private sector clients will significantly improve;
- Supervisors will have greater flexibility in re-distributing workload on any given day due to absences or other unforeseen events;
- The new system will provide flexibility to implement a single permit process for projects (combining issuance of building and trade permits);
- Access to permit information and the process will be available 24 hours a day, seven days a week;
- Reduce need to travel to the government center has several cost and environmental benefits;
- Eliminate duplicate data entry and storage in separate systems;
- Allow access to pertinent information by all functional areas.

The inclusion of the Complaints Management System will enable DPZ and the Health Department to continue managing caseloads, collecting and reporting complaints data in a timely manner, but with more accuracy and with greater reporting capability. However, it is impossible to estimate the exact time and dollar savings with any accuracy, as the new system will replace outdated systems that have been developed over time. It is likely that the County will have a cost savings over time as more effective and efficient data collection and enhanced complaints management will make the processes much more streamlined and customer responsive. It is anticipated that the information sharing between these two agencies and with other affected County offices will produce long-term savings.

The system will increase data availability without sacrificing security, and will provide maximum performance information to County staff, citizens/complainants, the Board of Supervisors, and other County agencies. It is anticipated that this new, improved system will help DPZ and the Health Department with its Performance Measurements for complaints and related issues. With enhanced capability to gather and track data, and share this information with appropriate parties, it is anticipated there will be an improved level of customer service. In addition, by incorporating better analysis and data presentation capabilities, the data will be more accessible to management when decision making is required to continue improvement initiatives and the allocation of funding and other resources.

IT0063 FACILITY SPACE MODERNIZATION

Project Description

This project removes technical roadblocks to effective and efficient group discussions by adding technology and streamlining the room preparation process. The largest conference rooms in the Conference Center will be outfitted with technical equipment and upgrades on a permanent basis. County agencies, boards, authorities, commissions, nonprofit organizations and civic associations will be able to conduct training, deliver presentations and hold more effective collaborative sessions, while eliminating the need for equipment set up and preparation. Audio and visual equipment will be accessible, available and ready to use without staff set up time. Customers will no longer need to provide their own equipment, or endure wait time while equipment is found and set up for them. The project will enable leaders and managers to utilize County resources such as time, personnel and space to effectively and efficiently conduct County business. These enhancements will improve the quality of service for employees and citizens who require special. 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.

Milestones

- *Develop project requirements, April 2004*
- *Request For Proposal issued, July 2004*
- *Contract Award, September 2004*
- *Vendor purchase, install and test equipment, October 2004*

Progress to Date

This will be the first phase of a new project commencing in FY 2005.

Project Staffing and Budget

FY 2005 funding of $100,000 will provide up-to-date technology to allow Fairfax County Conference Center customers to fully engage in collaborative events.

Return on Investment

This project, in an environment of a reduced workforce and an increased demand for products and services will improve communication capabilities for crisis management and emergency response, develop and train the work force in an effective and efficient manner and support and enhance the audio and visual equipment available for Conference Center users. Cost Savings will be gained by the reduced County staff time required to prepare a room for a meeting/presentations. 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) is a new project for FY 2005. It will enable County agencies to manage the implementation of proffers more comprehensively, which will enable County agencies, the Board of Supervisors, and the public to research and review proffers more efficiently. 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 mission of the Proffer Database and Status System (PRODSS) is to enable County agencies to manage the implementation of proffers. This will enable County agencies, the Board, and the public to research proffers more efficiently. The objectives of PRODSS are to monitor the status of the implementation of proffers, to have triggers which alert DPWES and other agencies when a proffer is due, and to keep an accurate and timely accounting of the fulfillment of proffers.

Milestones

- *Creation of cross-agency team to define new business process, July 2004*
- *Determination of roles and responsibilities of each agency, September 2004*
- *Inventory and evaluation of capabilities in each agency, October 2004*
- *Determination of data requirements, December 2004*
- *Interface to land development systems and other systems such as GIS, April 2005*

Progress to Date

This will be the first phase of a new project commencing in FY 2005.

Project Staffing and Budget

FY 2005 funding of $188,700 will design 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. FY 2005 funding is for the initial phase of the project which includes an initial assessment of existing systems, defining business processes and design of the project.

Return on Investment

Staff will spend significantly less time researching paper records to determine proffers and fulfillment of proffers; additional time will be required to enter data into the database. The County would avoid any potential costs associated with failure to enforce or implement a proffer. The new system will offer improved access to citizens' inquiries, the Board of Supervisors and to developers.

IT0065 FACILITY MAINTENANCE MANAGEMENT SYSTEM

Project Description

This project will provide for the replacement of the Facility Management Division's (FMD) existing Maintenance Management System and integrate it with other existing components of the Facilities Management System in order to provide a single, integrated facilities information resource for FMD, their customers, and other "partner" owners and users of facilities information. The system will replace FMD's existing Maintenance Management System which covers work orders and asset inventory, update the current hardware/software capabilities and enhance customer utility. A new system will decrease the amount of computer time needed to open and close work orders and run scheduled work reports.

The desired system will be a commercial-off-the-shelf (COTS) browser-based Integrated Facilities and Grounds Management System. The goal of this project is to implement an application that will increase the effectiveness and efficiency of staff and the utilization of capital resources required to maintain and manage the County's facilities and properties. An updated system will accomplish this 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.

Milestones

- *RFP Issued, May 2004*
- *Contract Issued, October 2004*
- *Develop implementation strategy, December 2004*
- *Identifying hardware needs/Procurement, December 2004*
- *Application Installation, January 2005*
- *Requirements Analysis, Process adjustments, February 2005*
- *Data Mapping/Conversion, April 2005*
- *Acceptance Testing of System, May 2005*
- *End User Training, June 2005*
- *Phase I — Post implementation Support, July 2005*

Progress to Date

This will be the first phase of a new project commencing in FY 2005.

Project Staffing and Budget

FY 2005 funding of $792,250 will provide for the replacement of the Facility Management Division's (FMD) existing Maintenance Management System and integrate it with other existing components of the Facilities Management System

Return on Investment

Extensive savings will be realized through the streamlining of communications and processes throughout FMD and other agencies, the most quantifiable savings derived from time saved by field personnel (crafts, trades and grounds personnel) and Work Control Center staff within FMD. Since present staffing levels are well below GSA standards for the current work load requirement, the field staff productivity increase will help to do more of the preventive maintenance effort which they are unable to perform at the present staffing levels. 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.

Fairfax County VIRGINIA

SECTION 4

MANAGEMENT CONTROLS AND PROCESSES

MANAGEMENT CONTROLS AND PROCESSES

FEATURED IN THIS SECTION

SECTION 4...
MANAGEMENT CONTROLS AND PROCESSES

4.1 STRATEGIC FRAMEWORK

The CIO Organization

In FY1994 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 (FY1995)*
- *creation of a CIO function (FY1995)*
- *standardization of technology investments across the County (FY1995)*
- *creation of a technology modernization fund (FY1996)*
- *annual technology project review as part of the budget process (FY1995)*
- *funding for technology training (FY1996)*
- *project steering committees, formal project reporting and governance (FY1996)*
- *creation of a permanent private sector advisory group (FY1998)*
- *creation of an internal Senior Management IT steering committee (FY1999)*
- *project manager certification (FY1999)*
- *creation of an enterprise technology architecture committee (FY2001)*
- *creation of an IT Investment Portfolio management position in DIT (FY2002)*

- *creation of an enterprise technology architecture function in DIT (FY2002)*
- *development of strategic planning alignment process (FY2003)*
- *merger of information architecture, web services and document management functions(FY 2004)*

The Role of the CIO

The County's Chief Information Officer (CIO) is responsible for the overall management of Information Technology resources. The Board of Supervisors has broadened the role of the CIO since the position was created. Not only is the CIO responsible for the Department of Information Technology, the CIO is also responsible for a broad range of information related departments. The Fairfax County Library and the Department of Cable Communications and Consumer Protection and the Health Insurance Portability Accountability Act (HIPAA) Compliance Office also report directly to the CIO. The CIO's direct responsibility for information spans books, television, technology, consumer protection and the management of documents.

To assist the CIO the Board of Supervisors in FY1998 created a permanent 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 Federation of Civic Associations, School Board, Northern Virginia Technology Council, League of Women Voters and the Chamber of Commerce respectively.

The ITPAC meets monthly 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 the Board of Directors to the CIO, providing advice, experience and support for the IT program.

The Senior IT Steering Committee assists and advises the CIO. This group includes the County Executive, Chief Financial Officer, Deputy County Executives, Director of the Department of Information Technology/Chief Technology Officer, 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 CIO to the ITPAC for its endorsement.

Project Prioritization and Execution

The Senior IT Steering Committee establishes the funding priorities for technology projects. The priorities for projects started in FY 1999 through FY 2003 provided one or more of the following benefits:

- Convenient Access to Information and services
- A High Level of Responsiveness to Customer requirements
- Management of County Information assets
- Management of County Technology assets
- Management of County Human Resource assets

For FY 2004, based on global changes in social and economic paradigm shifts, new priorities were adopted:

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

The 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 FY2005 funding and to support the following objectives:

- Submission of viable projects: minimize the rejection of projects 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 make final reviews. Funding consideration is guided by the five information technology priorities established by the IT Senior Steering Committee.

From this interview process, a recommendation for project funding is created. The Senior IT Steering Committee and ITPAC review the recommendation, any revisions are made and the ITPAC writes a letter endorsing the proposed projects and funding to the Board of Supervisors. The Board makes the final decision on funding based on this 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. They can even request that DIT do the project if that is the best solution. 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, 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 CIO 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 is involved. The certification focuses on project reporting and administration, contract negotiation and management, task planning and other topics. Certification is also required for technical project managers.

All of these elements…

- *CIO position at the Deputy County Executive level reporting to the County Executive*
- *private sector and internal County board of directors for the CIO*
- *planning and review of technology investments county-wide*
- *focus on standards, training and certification*
- *collaboration between agencies and DIT*
- *portfolio management*
- *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:

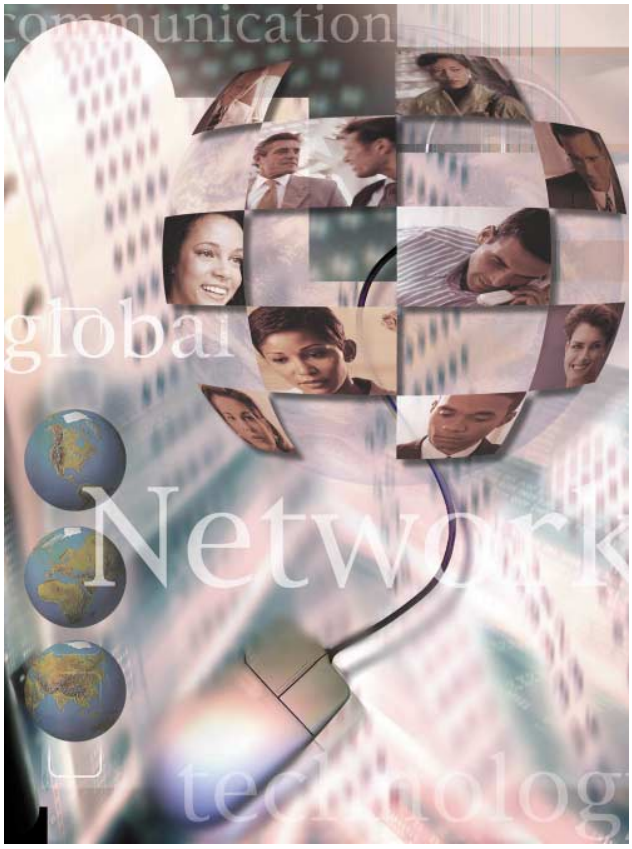
- *Strategic Planning Process*
- *Information Technology Architectural Planning and Execution*
- *IT Investment Portfolio Management*
- *Systems Development Life Cycle Standards; and*
- *Information Technology Project Management Program*

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 to 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 and make sure that limited resources are appropriately allocated to achieve the 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 that affect potential technology solutions and enrichments to the County's current technology architecture:

- The workplace is becoming more mobile, so job functions can be performed without having to be tied to a physical location
- Methods for communicating, collaborating and sharing information are becoming more automated.
- Information resources must be managed from a full life cycle perspective.
- Security for information and communications systems and privacy of information are critical priorities.
- Technical architectures are facing increased capacity and flexibility demands.
- Citizens are requiring access to information in a variety of ways.

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, evolve around staff resource allocation and skills ownership and accountability. One of our major challenges is to develop comprehensive performance measures systems. Working to overcome these challenged is a strategic priority as we recognize the important of the effort. Projects have been launched for both initiatives and performance measures that will result in improvements and align 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. 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 meets business requirements and focus on the real 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 lower total cost of ownership (TCO)
- 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 CIO and the Senior IT Steering Committee for Countywide implementation.

During the latter part of FY2002, 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 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, while as new technologies and platforms are incorporated into the overall architecture framework.

4.4 SYTEMS DEVELOPMENT LIFE CYCLE STANDARD

The Need for the 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 technologies include, but are not limited to, client server; WEB/Internet based applications, wireless technologies, and data architectures.

Purpose of the Systems Development Life Cycle Standards

The purpose of Systems Development Life Cycle Standards (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, and data architectures. 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 outputs 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. Once the SDLCS have been in place for a year, all 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 outputs are the deliverables of this document. The description of each output includes its purpose, content, recommended techniques and tools, and, where appropriate, a 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

Continuous Improvement of the Systems Development Life Cycle Standards

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. A working group representing all of the department's technology areas has been formed to formulate a standard methodology as to how outputs should be completed. 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 evolves. Additional focus has been placed on managing risks 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
- Information Systems' Infrastructure and Architecture and Application Development
- Project Budgeting and Cost Management
- Project Requirements Development
- Project Procurement and Contract Management
- Project Reporting
- 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 twice a year. Approximately one hundred fifty (150) 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 should acquire 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.

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.

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 CIO. 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.

Fairfax County
VIRGINIA

SECTION 5

IT ARCHITECTURE

IT ARCHITECTURE

FEATURED IN THIS SECTION

SECTION 5...
IT 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.

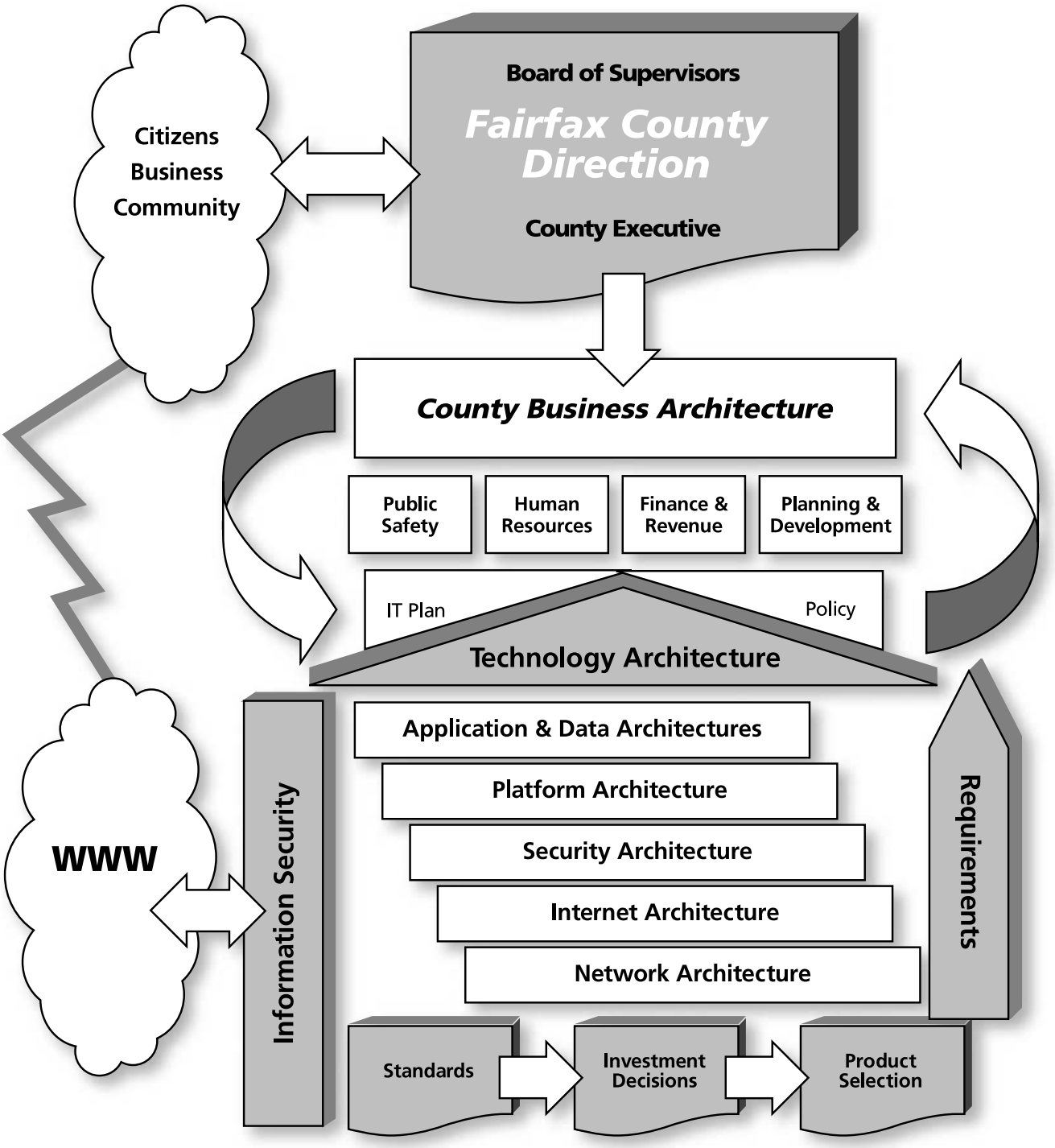
The Architecture Process Model on the following page illustrates the inter-relationships between the County's IT and business architectures, and the iterative processes involved to ensure the development of an IT architecture that is efficient, cost-effective and business driven. For the purposes of 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 Model



5.3 APPLICATION & DATA ARCHITECTURE

The application architecture defines how applications are designed and how they cooperate. The architecture promotes common 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 converts 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.

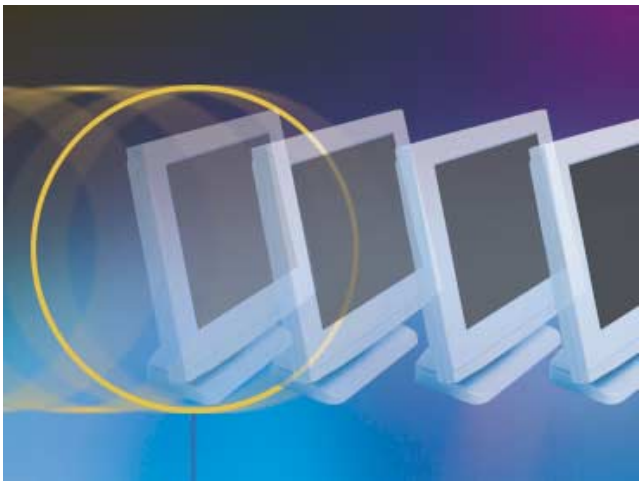
The .Net platform will provide the foundation for the next generation of both departmental and enterprise-wide applications. .Net provides a stable application environment with more opportunity for componentization of business logic, sharing of common components and the integration of business processes 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. The most 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 had been enhanced through the use of the county's middleware EIA software tool, WebMethods which ties the two COTS together creating an integrated process for processing financial transactions with a modern user friendly Windows presentation. There are several projects underway to use EIA and Web-enable other corporate systems to build in webservices, 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. Crystal, QMF, SAS, and Easytrieve Plus support ad-hoc query and reporting. 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 ERWIN tools.

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 used 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 2000 or Windows XP 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 2000 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 deployed during FY 05 will be using Pentium with the Windows XP operating system. This will be approximately two-thirds of the installed base.

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:

Mid Range Platform	Number of Servers
AIX	12
W2K/NT	320
Solaris	25
Unisys	1 (x24)

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.

Device	Machine
Mainframe Computer	IBM 9672-R26-CMOS 3 GB real & expanded memory
Tape Subsystem	IBM 3494 Automated Tape Library IBM 3590E Drives IBM 3480 (cartridge)
Printers	IBM 4100 Roll Fee IBM 3900 Laser IBM 6400 Matrix

5.4.2 Storage Area Network

In order to accommodate the incredible growth in data and better manage the storage environment, Fairfax County is utilizing a Storage Area Network (SAN) which has about 22 Terabytes of data. Implementation of this technology was begun in FY 02 with an initial eight Terabytes of storage. During FY 2005 we will expand by 14 Terabytes to accommodate new systems storage requirements and data storage growth. Platforms connected to the SAN include the mainframe server, Windows 2000 servers, Windows 2003 servers, 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:

Disk Subsystem — Intel & Unix	Hitachi 9960
MS Exchange environment	EMC2 (new for FY 05)
Tape Subsystem	IBM 3494 Automated Tape Library IBM 3590E Drives Spectra Logic 64K Tape Library

5.5 NETWORK ARCHITECTURE

The County's communications infrastructure includes both 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 of Fairfax County's Communication Group 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.

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 with a backup failover DS3 ATM circuit 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 new 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.

Network Management is currently supported on three platforms:

1. IBM Netview for MVS — Monitors mainframe and network resources,
2. CISCO Works 2000 — Monitors all Cisco installed equipment, and
3. CA Unicenter.

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 Communications Controller used to support the legacy SNA networks, which provides low speed mainframe only network connections to several remote sites. External "Trusted Partner" hosts to which Fairfax County has network connections include the Fairfax County Public School system, Fairfax County Public Library, Fairfax County Water Authority, several Commonwealth of Virginia host systems, as well as connections for several of the adjoining jurisdictions for public safety. During the next two years, the County will light the dark fiber provided 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 IP 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, 1A2 Key equipment, 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, large Human Services centers, Parks, Libraries, public safety sites (Police and Fire and Rescue), "911" Centers, 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 voice communications solution using the latest technology that includes VOIP and can also reside on the fiber I-Net.

The Communication Technologies Group 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 ICN (formerly ROLM) CBXs and Nortel Meridian Option 61C PBX systems; all having integrated voicemail systems. There is a mix of CBX 9722 platforms, as well as Rolm's Phone Mail releases 4.x, 5.x and 6.x.
- Fairfax County's main Government Center's voice traffic is served with a four-node 9751-70 and the County's Public Safety Center located at the Massey campus with a two-node 9751 model 70. These systems, as well as several other large building systems are interconnected via DS1 tie lines which, bypasses the message unit charges from the Public Switched Telephone Network.
- 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, health centers, etc., are served by Toshiba DL and small Siemens (Redwood) systems, all with integrated voicemail. The County also has one Mitel 200D and one Avaya PBX.
- Police and Fire and Rescue stations use Nortel BCM and Meridian Systems.
- 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 by Centurgistics, 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 inprove 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 2005 will see the exploitation of this strategic plan into tactical plans and implementations to meet the telephony needs and requirements of our customers and move the County into a truly integrated video, data and telephony Enterprise Network, employing the facilities provided by the County's new fiber-optic network — I-Net.

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.

A. 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 nine 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, City of Manassas, City of Manassas Park, as well as the District of Columbia Fire Department. The public safety agencies of Loudoun County, Prince William County, and Montgomery County will be added to the

interoperability compatibility as they activate their own new radio systems. Fairfax County is expanding this public safety radio system by adding three additional tower site locations to be completed in summer, calendar year 2004.

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.

B. PUBLIC SERVICE RADIO NETWORK

The County currently operates a 1980s-era trunked radio system of more than 3,000 mobile and portable radio for the Department of Public Works and Environmental Services, Public Schools Transportation (school bus fleet), Park Authority, Water Authority, FASTRAN, and other non-public safety County agencies. This current zoned radio system consists of two transmitter sites in Fairfax City and in Lorton. The County is replacing this outdated radio system, which has insufficient geographical coverage to meet user requirements, with a state-of-the-art, 800MHz analog trunked radio system. The system design consists of seven tower site locations, and will provide additional capacity to users and a "seamless" environment, which will not require County vehicles to change channels as they move through radio zones. This system replacement is projected to be completed in the summer of calendar year 2004.

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. The 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, videoconferences, 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.

A. 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.

B. 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 Connection (ODBC), and other products that provide the access layer for the 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. Authentication for each internal user is based upon a unique UserID (also called a sign-on or log-on) combined with a unique password

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 begun implementing 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, To improve the secure access and authentication to web-based applications as well as backend servers, the County has procured products from Netegrity. These products provide a solution that resolves today's security issues and positions DIT to leverage this investment and framework in the future to build upon and resolve other critical access control and user administration issues within our heterogeneous system environment. Netegrity, 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 are you allowed to do on the site) for web-based applications. Netegrity 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.

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. In FY 2005, 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 infrastructure 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.

Fairfax County
VIRGINIA

APPENDIX

APPENDIX

FEATURED IN THIS SECTION

Fairfax County IT Standards

DESKTOP, LAPTOP:	
Operation System	Windows XP
DESKTOP APPLICATIONS:	
Word Processor	Microsoft Word 2003
Spreadsheet	Microsoft Excel 2003
Presentation	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
SPECIALTY APPLICATIONS:	
Web Browser	Microsoft Internet Explorer (latest release)
Antivirus	Symantex AntiVirus (latest release) for Workstations and Servers
Mainframe 3270 Emulation Software	Jacada web-browser based 3270 emulation
GIS	Arc/Info 8.3 ArcView 3.3 ArcView 8.3 ERDAS 8.6 Map Objects 2.1 ARC Internet Map Server 4.1 ArcSDE 8.3
SERVERS:	
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 MetaFrame XPe
Hardware	Intel (Windows) SUN (UNIX) IBM S390 (Mainframe)
Backup	Tivoli Storage Manager 5.1 z/OS DFSMS
Storage	SAN
E-Mail	Microsoft Exchange Server 2003 Enterprise Edition Lsoft ListServ
Web Application Servers	Microsoft Internet Information Server (latest release) Apache Web Server if JAVA based web server required by COTS package .NET FRAMEWORK Active Server Pages /ASP.NET (latest release)
Database	Oracle 8 or higher DB2 Release 6 Microsoft SQL Server 2000
Communications Protocol	TCP/IP

CHART A:
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 2.2 GHz	Pentium IV 3.0 GHz 800 FSB	Pentium IV 1.6 GHz	Pentium IV 1.7 GHz
DISK CONFIGURATION	40 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	60 GB Hard Drive, DVD-CDRW Combo Drive	60 GB Hard Drive, DVD-CDRW Combo Drive
RAM	512 MB 2 DIMMS, expandable	1 GB 2 DIMMS, expandable	512 MB	1 GB 2 DIMMS
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 2000 Pro	Windows 2000 Pro	Windows 2000 Pro	Windows 2000 Pro
MAINTENANCE	3 Year on-site, next business day	3 Year on-site, next business day	3 Year on-site, next business day	3 Year on-site, next business day
ADDITIONAL HARDWARE REQUIREMENTS	UL Approved Surge Protector (new) Sound Card, 2 USB ports	UL Approved Surge Protector (new) Sound Card, 2 USB Ports	UL Approved Surge Protector (new) Back-up Battery Docking Station (if used as desktop) Security Lock	UL Approved Surge Protector (new) Back-up Battery Docking Station (if used as desktop) Security Lock
MAINFRAME 3270 EMULATION	Jacada web-based 3270 emulation	Jacada web-based 3270 emulation	Jacada web-based 3270 emulation	Jacada web-based 3270 emulation
THIRD PARTY SOFTWARE	Symantec Anti Virus, Enterprise Edition Microsoft Internet Explorer (latest release) MS Office Suite XP MS Outlook MS SMS Client	Symantec Anti Virus, Enterprise Edition Microsoft Internet Explorer (latest release) MS Office Suite XP MS Outlook MS SMS Client	Symantec Anti Virus, Enterprise Edition Microsoft Internet Explorer (latest release) MS Office Suite XP MS Outlook MS SMS Client	Symantec Anti Virus, Enterprise Edition Microsoft Internet Explorer (latest release) MS Office Suite XP MS Outlook MS SMS Client
PRE-INSTALL OPTIONS	All components (hardware) installed	All components (hardware) installed	All components (hardware) installed	All components (hardware) installed
PREFERRED MANUFACTURER	Dell	Dell	Dell	Dell
OPTIONAL (AS REQUIRED FOR BUSINESS NEEDS)	Speakers Head Phones Additional Memory Additional Hard Drive	Speakers Head Phones Additional Memory Additional Hard Drive	Speakers Head Phones Additional Memory Additional Hard Drive	Speakers Head Phones Additional Memory Additional Hard Drive

CHART B:
PLATFORM ARCHITECTURE STANDARDS:
FILE/PRINT/WEB SERVICES

COMPONENT	FILE/PRINT SERVERS	WEB SERVERS (INTEL)	WEB SERVERS (UNIX)
TYPE	INTEL	INTEL	INIX
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 Database/Application Drives –	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) 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
OPERATION SYSTEM(S)	Windows 2000 Server	Windows 2000 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 Minimum Cache 256MB	4.0 GB Minimum Cache – Database/	4.0 GB Minimum Cache – Database/ Application specific	8.0 GB Application specific
FILE SYSTEMS	NTFS	NTFS	Solaris
THIRD PARTY SOFTWARE REQUIREMENTS MS SMS Client Internet Information Server	Symantec Antivirus, Enterprise Edition MS SMS Client Internet Information Server	Symantec Antivirus, Enterprise Edition Netegrity SiteMinder Agent (latest edition) or Apache Web Server if JAVA based web server required by COTS package	Symantec Antivirus, Enterprise Edition (latest edition) or Apache Web Server if JAVA based web server required by COTS package
PREFERRED MANUFACTURER	Dell	Dell	Sun
MAINTENANCE	3 Year, 24/7, 4 hour on-site, parts & labor included	3 Year, 24/7, 4 hour on-site, parts & labor included	3 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 HARDWARE/SOFTWARE	Tivoli Storage Manager Enterprise Backup Client	Tivoli Storage Manager Enterprise Backup Client	Tivoli Storage Manager Enterprise Backup Client Veritas Volume Manager (if connected to SAN)

CHART C:
PLATFORM ARCHITECTURE STANDARDS:
DATABASE/APPLICATION SERVERS

COMPONENT	DATABASE SERVERS (INTEL)	DATABASE SERVERS (UNIX)	APPLICATION SERVERS (INTEL)	APPLICATION SERVERS (UNIX)
TYPE	INTEL	UNIX	INTEL	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 3.0 MHz	Dual 3.0 MHz	Quad 3.0 MHz
NETWORK INTERFACE CARDS	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T
OPERATION 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 EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Not required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Not required if EOC resident
RAM	8.0 GB Minimum Cache – Database/ Application specific	8.0 GB Minimum Cache – Database/ Application specific	8.0 GB Minimum Cache – Database/ Application specific	4.0 GB Minimum Cache – Database/ Application specific
FILE SYSTEMS	NTSF	Solaris / AIX	NTSF	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
PREFERRED MANUFACTURER	Dell	IBM/SUN	Dell	SUN
MAINTENANCE	3 Year, 24/7, 4 hour on-site, parts & labor included	3 Year, 24/7, 4 hour on-site, parts & labor included	3 Year, 24/7, 4 hour on-site, parts & labor included	3 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 HARDWARE/SOFTWARE	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

CHART D:
DATABASE & APPLICATION ARCHITECTURE STANDARDS:
SERVERS

COMPONENT	MAINFRAME	UNIX	INTEL	INERNET/INTRANET
DATABASE SOFTWARE	DB2, VSAM	Oracle 9i	Oracle 9i or SQL Server (latest release)	N/A
APPLICATION SOFTWARE	N/A	.NET Framework	.NET Framework	Index Server (w/PDF 1-filter) (or Verity K2E1, .NET Framework
SOFTWARE/ DEVELOPMENT TOOLS	COBOL, CICS, TSO, JCL	Visual Studio.Net	Visual Studio.Net	Homesite, Visual Studio.NET 2003 or higher, Dreamweaver
SECURITY SOFTWARE	RACF	Native operating system	Active Directory	Netegrity SiteMinder
APPLICATION INTEGRATION	web Methods	web Methods	web Methods	web Methods
SCHEDULER	CA7	CRON	Scheduler Service	Scheduler Service
AD HOC REPORT TOOLS	Crystal Reports, SAS, Easytrieve Plus, QMF	Crystal Reports, SAS	Crystal Reports, SAS	Crystal Reports, SAS
WORKSTATION REQUIREMENTS	Jacada web-based 3270 Emulations, TCP/IP Connectivity	Oracle Client Suite, ODBC Drivers	Oracle Client Suite, ODBC Drivers	Microsoft Internet Explorer (latest release)

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.

A) Horizontal (cabling and pathways)

Current	Future
CAT5/5e UTP and SCTP	CAT6 UTP and SCTP

B) Outlets

Current	Future
Category 5/5e Cabling	Category 6 Cabling
Siemen's 4 outlet modular faceplates	
Color-coded inserts *(to identify the media being used in each outlet)*	
Voice and data terminated at the same faceplate.	

C) Between Buildings / Backbone

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