

## **INFORMATION TECHNOLOGY FY10 STRATEGIC PLAN**

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## SECTION 1...INTRODUCTION

### 1.1 Executive Summary

The County is continually faced with many opportunities and challenges caused by greater expectations of the public and employees to utilize technology as an enabler to accomplish daily tasks and meet their needs. This expectation occurs within an environment of rapid change, finite resources, as well as a *challenging* economic environment. To be successful, the County's Office of Information Technology (OIT) needs to continuously operate more effectively and efficiently to provide better customer services as well a business solutions at less cost and more convenience.

To ensure that the County continues to meet this challenge, emphasis is placed on projects that keep the technical infrastructure a strong foundation for OIT applications and services, allow the County to communicate easily internally and with citizens, and allow easy access to County data and services. Emphasis is also placed on OIT projects that are managed consistently, are cost effective, are aligned with County strategic goals and that there is a proper level of oversight and tracking for OIT investments.

This plan summarizes the County's underlying principles for the management of the Office of Information Technology (Section 1.5), Initiatives and Strategic Directions (Section 2), Fiscal Year 2009/2010 OIT Programs and Planned Enhancements (Section 2.2), Office of Information Technology Plan Project Summary (Section 3), Information Technology Architecture (Section 4), Management and Controls Process (Section 5). The plan identifies technology directions and initiatives required to accomplish mission-related objectives; project accomplishments for on-going efforts and resources required for successful implementation for these initiatives.

This strategic plan will be adjusted annually to reflect current 3-5 year rollout, as well as updates to the strategic County technological objectives.



## **1.2 EXECUTIVE LEVEL OVERVIEW OF INFORMATION TECHNOLOGY IN THE COUNTY**

County Office of Information Technology (OIT) is grouped into the following core areas:

1. Public Safety
2. Finance and Administration
3. Human Resources
4. Land Use
5. Corporate wide shared resources
6. Technology Infrastructure
7. Telecommunications
8. Cable Television (CATV)
9. GIS, Geographical Information Systems

In general, the County OIT architecture includes the following major components:

- Z/800 Enterprise WEB Server (WEB & Legacy applications)
- AS/400 Servers (JD Edwards ERP applications)
- RS/6000 Servers (Tax/Utility Billing, GIS, E911, Land Use, Infrastructure applications)
- HP NetServers (Novell IntraNetware & NT)
- Storage Area Networks in strategic locations
- 3,600+ Personal Computers
- TCP/IP Network using Cisco equipment, hybrid private fiber optic and commercial backbone, geographical locations, hubs across the county
- PC Workstations (Dell, Hewlett Packard, Misc) using Microsoft Windows XP
- ATM and Fast Ethernet WAN backbone
- Ethernet Local Area Network topology
- Centrex voice communications systems
- 800MHz public safety radio communications system
- 4 local CATV Franchises, including Public, Education. Government (PEG) and Television facilities

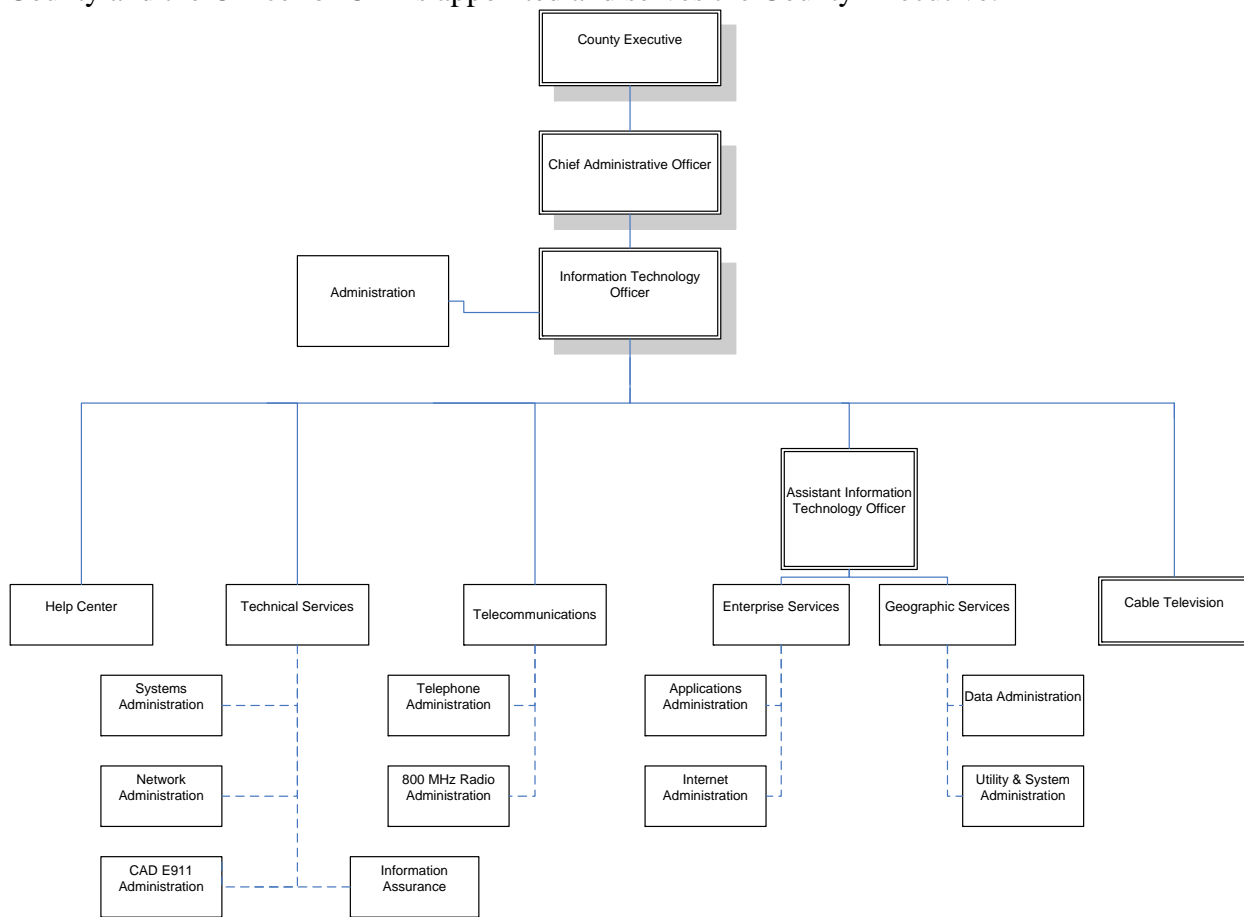
### 1.3 INFORMATION TECHNOLOGY ORGANIZATION

The Office of Information Technology (OIT) was formed in FY03. The creation of this department corresponds to the County Executive’s goal to consolidate information technology services into a single department to improve the delivery of technology services on an enterprise level.

The Information Technology Officer is responsible for the overall management of the Information Technology resources. Combining the forces and resources of CATV Administration, Information Services, Geographic Information Services (GIS) and Telecommunications formed OIT. This allows for true strategic technology planning, upgrade, replacement, and diminishes high costs of system duplication, reduces duplication of maintenance and resources for support and advancement of technology. It better prepares the county in a countywide infrastructure for information sharing, access, and reporting.

#### Office of Information Technology Organizational Structure

The Office of Information Technology reports directly to the Chief Administrative Officer of the County and the Officer of OIT is appointed and serves the County Executive.



OIT will contribute to an efficient and productive County Government and will use modern information technologies to improve 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. These reflect important issues facing the department.

Anne Arundel County continues to make the necessary investments in information technology hardware and software, which through careful planning, cooperative business and technical execution, provides citizens with a return on investment in the form of improved services. OIT is continuing its strategy to consolidate and maximize the use of technology and services – while simultaneously reducing the cost to deliver these services. A prime example of this is Server Virtualization and Thin Client Technology initiatives in progress.

These goals were established to energize the Department in performing its functions of developing and maintaining current information technology systems, providing a technology infrastructure and customer service support to *County Agencies* as well as *New and Improved Citizen Public Service* through public access, and public reports, and improved public information availability.

The organization structure is continually being updated and designed to deal with the ongoing evolution of technology and its utilization in support of the business functions within County Government. It is important to note the requirement of keeping competencies in house to maintain systems for legislative changes, deemed necessary for taxation, licensing, permitting, etc both required by state, federal, and regulatory requirements as well as technology vendor and contract management. The organization will also strive to look at a balance of competency internal to cost effective outsourcing and solutions to keep up with the County demands both as an internal and external customer service organization. This evolution has seen tremendous growth in distributed application systems, local area networks, as well as in the number of processors and distributed software applications used in support of various County functions as well as the intranet and Internet accessibility. These information systems are crucial and mission critical to the day-to-day functions of County Government. The ever-increasing complexity and sophistication of these systems require equally well-trained end-users and Information Technology staff with in house competencies to lead outsource providers both with resource and application management.

## **1.4 COUNTY EXECUTIVE AND ANNE ARUNDEL COUNTY KEY GOALS**

### **Vision**

Anne Arundel County will continue to be a place that values and strives to protect the natural and cultural environment, where opportunities exist to live in a variety of well designed and maintained neighborhoods and communities. It will be a place where a healthy local economy will provide jobs, and people can travel by foot, bicycle, car and transit to nearby employment areas and to a variety of educational, recreational and commercial services. Anne Arundel County will strive to provide the best educational and public safety services while maintaining a high quality of life for all of its citizens.

### **Long Term Goals**

1. Public Education – to build a working relationship with the Board of Education to provide for the needs of the children of the County, and to support the Community College and Library in the provision of life-long learning environments and services to all citizens of Anne Arundel County.
2. Public Safety – to provide a safe and secure environment to everyone who lives, works and conducts business in Anne Arundel County.
3. Environmental Stewardship and Managing Growth – to protect and maintain the character of the various types of communities throughout the County, including the revitalization of older communities and the preservation of agricultural land.
4. Fiscal Management – to adhere to conservative financial policies and continually strive to efficiently utilize available resources.
5. Transportation – to establish and maintain a transportation plan and program that is compatible with the County’s land use, growth management, environmental and economic development priorities.
6. Economic Development – to attract and retain business investment, focusing on those companies that maintain economic balance, that respect our quality of life on the magnificent Chesapeake Bay, and that provide quality, high paying jobs to Anne Arundel County citizens.
7. Health – to educate the public about health hazards and promote programs that increase awareness, detection and early discovery of harmful diseases.
8. Recreation – to expand services to residents at low cost so as to enjoy the benefits of natural resource preservations, and to contribute to a health and active community by improving trails, parks and activities.
9. Technology Management – to provide citizens, the business community, and County employees with quality-driven, timely, convenient access to appropriate information and services through the effective and efficient use of technology.

## 1.5 OFFICE OF INFORMATION TECHNOLOGY MISSION

### **Mission Statement**

It is the *mission* of the Office of Information Technology (OIT) to provide value, leadership and support the county executive and Anne Arundel County key goals by facilitating the identification, implementation and use of technology to support these goals, and the Citizens while enhancing customer service. Essential services provided will include: a high-quality, secure technology infrastructure, professional resources, business and geographic data, computing and network applications, telecommunications and video services and Cable Television Administration.

### ***Fundamental Principles***

1. Our ultimate goal is to provide citizens, the business community, and County employees with quality-driven, timely, convenient access to appropriate information and services through the effective and efficient use of technology.
2. Maintain a strategic information technology plan aligned to County business goals and objectives. Business needs drive information technology solutions. Strategic partnerships, teamwork and customer service is essential in order to maximize the productivity of County employees.
3. Develop and maintain integrated applications and a data architecture that emphasizes standardization, sharing, controlled access and quality through common relational database systems avoiding duplication.
4. Continually evaluate business practices and methods in relation to proven and open technology solutions while exploiting functional commonality and standards across government operations.
5. Manage Information Technology as an investment. Annually allocate resources to cover depreciation for replacement of systems and equipment. Include infrastructure replacement in strategic planning for effective fiscal management of technology resources.
6. Provide effective and efficient Customer Service through well-developed education and training programs in conjunction with Help Center support services.
7. Develop and maintain a technically and professionally competent staff skilled in current and emerging technologies to maximize business benefits.

## SECTION 2... INITIATIVES AND STRATEGIC DIRECTIONS

### 2.1 STATEMENT OF TECHNICAL DIRECTION

Keeping up with the pace of technology change and using it effectively to meet end-user requirements is still the most critical challenge facing information technology providers. Advances in technology can enable the workforce to provide improved service at a reduced cost – but changes in technology can be expensive and complex.

To maximize the benefits of new technology in a cost-effective manner, adoption into the existing technology infrastructure of an organization must be done wisely. Recognition of the expense, complexity, and end-user expectations for easily accessed and readily available information challenges information technology providers to find new cost effective ways to deliver information and services when and where it is needed.

The challenges noted above require a strategic direction that identifies a life cycle replacement plan that blends new and old technologies and ensures that the County business applications and technical infrastructure support both today's mission critical and tomorrow's evolving business needs. Key aspects of this strategy include:

- ***Easy public information and services access*** are currently provided to the public through the County Web site. This allows our customers to conduct business whenever and wherever it is convenient. This service will continue to be expanded through our technology program. Internet technologies will command increased attention as more information and services are delivered to the customer electronically.
- ***Easy County agency information access*** is provided by newer systems employing client-server computing architectures that allow users access to information easily at the desktop and to manage data in local databases. While client-server systems unleash the power and flexibility of networked microcomputers, the cost of operating and managing these complex systems is currently higher than traditional non client-server systems. Industry analysis indicates client-server systems can have a total cost of ownership as much as 70 percent higher than an enterprise warehoused based system. Because of this, we are employing additional methods to provide easy access to information primarily through Web based applications structure and graphical database query tools and formats.
- ***Standard hardware, software and development methodologies*** are adhered to by County employees and vendors on all projects and continue to be refined. Technology that allows us to leverage legacy applications/data to achieve new capabilities and benefits will be adopted.

Included are applicable areas of Telecommunications and Cable Television. Commercial-Off-The-Shelf (COTS) software packages offer great promise for rapid implementation and

reduced life cycle costs – where appropriate to fit the business requirements. Financial Management, Procurement, Tax/Utility Billing, Public Safety, Human Resources are COTS systems. COTS systems have four major downsides: (1) COTS often employ proprietary rather than “open” systems; (2) COTS packages by nature force the County to become very dependent upon the vendor; (3) COTS packages possess less capabilities than many present legacy systems and often require significant customization; (4) COTS packages often force business practice changes on the County workforce (this has its advantages also).

Therefore, the correct mix and integration of COTS and using high level WEB tools to access, browse, and utilize current data without massive and expensive changes by data “warehousing” and countywide access, will be the priority where at all possible. The model of warehousing can be used both with in house and outsource networks. The utilization of old data by county wide access by public and county workers through new tools such as Browser, web based interfaces, internet, and e commerce and data warehoused based technologies will be the County strategy. Management of “risk” is also a factor due to the fact that the business life cycle and replacement plan must be considered in all cases.

Technology Life Cycle management is also paramount in managing various aspects of hardware replacement, our present direction in virtualization of the complex Server environment is reaping many benefits to reduce overall costs in administration and energy consumption. Thin Client technology will allow savings in life cycle management verses personal computer replacements – while still providing necessary functionality for County staff.

- **Network capacity** is continuously evaluated and expanded as necessary. Ethernet (switched) is the cost-effective scalable technology capable of satisfying these bandwidth requirements. Recent advances in Ethernet technology have made it possible to provide guaranteed levels of service for applications, including the most bandwidth intensive applications such as multimedia. TCP/IP is the most widely accepted industry standard network protocol. It is the foundation upon which modern computing systems and architectures are built. TCP/IP is also the backbone of the Internet; the world’s largest data network, and is the network protocol capable of delivering the next generation of applications to include electronic commerce and multi-media-enabled applications.

Phase III of its institutional network expansion is underway. This effort (once completed) will incorporate additional Library sites, Elementary schools, and additional County locations into an already robust fiber optic network environment for the County Public School System and Community College. A combination of data and multi-media traffic is currently operational. Standardized network electronics are installed in all new sites enabling consistent high-speed connectivity.

- **A mix of technical skills and competencies** are required to accomplish the successful integration of new technologies, older technologies and legacy systems. Proper **training** must be provided to County technical staff, including **retraining and cross training** in order to maintain a proficiency in both the new and old technologies. Knowledge transfer

from our development partners is an essential requirement of all contracts. Hiring specialized skills from the private sector is also required to infuse new skills and to deliver system solutions more quickly. The *cost effectiveness of contract development* and *outsourcing of various IT operations* is continually being evaluated and employed as appropriate. However, **the core competency base must be maintained and continued within the County in order to manage proper decision-making, especially vendor & technical competency management as well as overall knowledge.**

OIT will continue to grow and enhance staff skills in the Internet/Intranet WEB technologies. This strategy is extremely vital for the County's foundation of systems that utilize browser based; data warehoused applications for government and public access – and ease of use.

These strategies are intended to provide cost-effective information technology operations that will efficiently deliver County information and services to its citizens. Existing systems will be enhanced with new technologies and our network infrastructure is constantly being improved as we move forward with the County's IT modernization program.



## 2.2 FISCAL YEAR 2009 ACCOMPLISHMENTS

### **ADMINISTRATION:**

- Technology Inventory Program Enhancements
- Electronic Document & EMAIL Archiving
- Department Technology Planning Enhancements
- Technology Management for 2008 Presidential Elections
- Courthouse Security System Enhancements
- Ambulance Billing

### **HELP CENTER:**

- Implemented Internet Phone Contact Center (IPCC).
- Implemented automated self-help facility.
- Improved the order-to-implementation times for PC's, laptops and printers from 6+ weeks to 3 weeks
- Realigned and improved Support Services coverage areas and consolidated staff in strategic locations
- Negotiated 4 price reductions for Dell PC's and Laptops
- Achieved Help Center satisfaction rate of 92% (via end-user survey)
- Replaced over 487 County PC's, 71 Laptops and 85 printers

### **CABLE TELEVISION:**

#### **I-NET**

- 21 Elementary Schools connected in Crofton, Millersville, Gambrills, Odenton, Severn and Glen Burnie
- Library Headquarters and Glen Burnie, West County, Crofton, Severna Park and Edgewater branches connected to the I-NET
- 3 Network Redundancy projects completed
- Prince George's County I-NET connection for the Anne Arundel Emergency Operations Center to the National Capital Region Network and the University of Maryland Telecommunications System connection to Anne Arundel Community College

#### **Educational Access Television**

- Constructed television system to air Board of Education meetings live on the school's cable channel

#### **Government Access Television**

- Installed new playback system to improve quality and reliability of the Government Access cable channel

#### **Cable Television**

- 150,000 cable subscribers in Anne Arundel County with 3 cable companies, Broadstripe, Comcast and Verizon, competing in most areas of the county

### **Digital Television Transition**

- Participated along with PG and Montgomery Counties to conduct training sessions with the Maryland Association of Counties on the DTV transition
- The Office of Cable Communications and the Federal Communications Commission held a training session for the Anne Arundel Department of Aging & Disabilities and Community & Constituent Services on the DTV Transition

### **APPLICATION SERVICES:**

#### **MUNIS**

- Moved the Tax Sale & Overpayment Refund process into production
- Completed programming for special condition codes in the Mass Pay edit process
- Implement MUNIS SELF SERVE\*
- Separated City of Annapolis Utility Billing from the normal Cycle 5 billing process
- Implement v6.5 / v7.2 to bring MUNIS up to current level for support\*
- Implement ZEACOM Popup screen process\*

#### **PERSONNEL/BENEFITS**

- Installed Term Vested report & termination form
- Completed enhancements to Employee Benefits report
- Designed/programmed database function to determine employee's retirement eligibility and ability to track history of retiree health benefits
- Completed redesign of 2008 open enrollment form for active employees
- Document important yearly processes, including Benefits Statements, Open Enrollment, Leave projections, Leave-Up-Front, Valuation statements, and valuation for DROP
- Completed Benefits Database Documentation

#### **Administration**

- Install various enhancements to the Complaint Tracker System for Community & Constituent Services\*
- Implement changes in Aging STATS application for the vendor to host the AIM database \*
- Provide the ability for JURY staff to enter their own Header Card data for batch programs\*

#### **Public Safety**

- TeleStaff went into production in mid-October
- Implemented enhancements to the Animal Control Web application
- Public Safety (CAD & RMS) system replacement project activities

#### **Finance**

- Converted the Letter of Credit application to MS-Access
- Implemented the new controller's signature for AP check printing
- Implement Recordation Tax Application to replace existing application\*
- Completed the new release of the BGE and PEPCO interfaces. The enhancements included increased business size functionality, melding of the BGE and PEPCO billing data into a download file to be used by departments for tracking electrical and gas expenditures, converting the PEPCO payment process from check to wire,

recording gas expenditures to the gas object account and development of an annual file back-up process for BGE and PEPCO datasets.

- Developed a process to delete ADP payroll datasets that have a creation date of greater than one year old.
- Developed a process that allows Personnel to generate reports using datasets created during the ADP Interface process.
- Modified the Telecommunications database, reports and the associated local service and long distance mainframe interfaces to function using an increased business unit length.
- Modified the Verizon long distance and local service interfaces to obtain the billing data from the Verizon website. User documentation for the extraction processes was written.
- Modified the MUNIS interface process to function using an expanded miscellaneous cash receipt number.
- Designed and implemented a Refunds Interface process for Finance.
- Completed the annual 1099 processing changes. These changes included the modifications to the Microsoft Access 1099 database tables, menus and existing database reports, the creation of 5 new 1099 database reports that replace existing mainframe Easytrieve reports, modifications to the mainframe 1099 processes to reflect changes in the 1099 database and IRS reporting specifications, and converting to pre-printed 1099-INT, 1099-MISC and 1099-S forms.
- Implement additional standard voucher to interface processes as determined by Finance.\*
- Assist in the EnterpriseOne conversion of users from fat to thin client by providing interface test data.\*

### **GIS Data Development**

- Orthophotography 2007 – participated in the Maryland’s Aerial Photography Cooperative. Data received and implemented in enterprise mapping applications.
- Planimetric 2007 Update – contract with Location Age, LLC to update planimetric data sets off of 2007 imagery. Deliveries included map layers for building structures, road edges, bridges, open water, piers, driveways, trails and marshes. New map layers added in this contract include County shoreline, towers, athletic fields, swimming pools, railroads, sidewalks and fences. Estimated completion February 2009.
- Street Centerline Enhancements - Significant progress on the county’s street centerline map layer to meet requirements for the new Tiburon E9-1-1 computer aided dispatch system and routing requirements for the Police MDC’s. Estimated completion April 2009.
- Structure Addressing – received grant from the Emergency Services Number Board (ESNB) for \$724,000 to complete field verified structure address mapping project. Contracted Axis GeoSpatial, LLC. Project in-progress and is estimated to be completed September 2009.

### **GIS Applications**

- CountyView – contracted with GeoNorth, LLC and completed upgrade to version 3.1. Upgrade includes enhancements to Parcel search using the County’s property

geodatabase, Lat and Long search and display, street cross-street search and Night Mode.

- Migration to ArcGIS 9.3 upgrades. Estimated completion February 2009.

#### **GIS Products and Analysis**

- Election Maps – maps completed for the Election Office in preparation for the presidential primaries and general election.
- Mailstop Routing for FMD – completed scenarios for Central Services to implement two mail delivery routes, eliminating one of three vehicles.

#### **GIS Training, Coordination, and Outreach**

- Provided in-house training for ESRI ArcGIS I and ArcGIS II courses by a staff member authorized to conduct certified training by the software vendor. Classes after November 2009 have been cancelled, due to the spending freeze.
- Continued participation in statewide GIS coordination efforts yielding products and savings
  - Maryland State Geographic Information Committee (MSGIC) efforts
  - Maryland Addressing Initiative
  - MD iMap / Maryland GreenPrint
  - Street Centerlines with Maryland State Highways Administration
  - National States Geographic Information Committee 50 States Initiative
  - FEMA Floodplain Map Modernization Program with Maryland Department of Environment (MDE)
  - WebEOC

#### **Recreation and Parks**

- Implemented user-id and password security for Recreation & Parks Internet applications
- Changed Parks batch reports to print at each individual park instead of park headquarters
- Complete outstanding maintenance requests on recreation and parks system (February 2009)
- Develop requirements and design for Parks Inventory system \*
- Develop new billing program for summer child care programs \*

#### **Inspection and Permits**

- Completed implementation of AADM Work Flow system to replace Office Vision
- Completed additional validation for Storm Water Management System
- Develop and implement an Automated Certificate of Occupancy module for Inspections and Permits \*
- Complete current phase of Major subdivision upgrade \*
- Rewrite the current environmental inspection system from access to WebSphere to facilitate real time
- updating of inspections (Spring 2009)
- Develop requirements for state replacement of CPF system (Spring 2009)
- Change Utility Allocation billing system to allow payments to be made over a five year period \*

#### **DPW Right of Way**

- Completed phase 4 (Inspector Portal) of Right of Way Permit System for Intranet

### **DPW Solid Waste**

- Completed addition of new waste collection routes to MyAnneArundel

### **Application Development Infrastructure**

- Develop procedure for user departments to reconcile OPAY credit card payments\*
- Installed Websphere 7.0 / related software on new server hardware, raised the compliance level of the county's web applications to Java 5, migrated these updated applications to the new platform, and moved the new environment into production (Projected for completion by End of FY09).
- Created a web framework for developing new java applications using the Hibernate database persistence model.
- Developed a library application to facilitate the use of common java scripts for form validation, text formatting, the loading of calendars, and other commonly used functions.
- Corrected problems inherent to several county web applications which caused instability in the Intranet web environment due to database connection pools being filled up.

### **Sharepoint**

- Completed development of OIT Equipment Ordering site on SharePoint to assist with the procurement and distribution of OIT equipment throughout the County.
- Updated the SharePoint site utilized for Legislative review with a bill lookup tool and links to bill details.
- Created OIT Project Tracking site on SharePoint to facilitate the management of software development, enable collaboration with business units, track OIT time to project activities, and provide executive visibility to project milestones.\*

### **Voice Response (telephone) Applications**

- Assisted with the management of a project to replace the Department of Aging's integrated voice response application. Provided guidance in terms of vendor selection, chosen hardware platform, and overall technical support.
- Worked with a vendor to develop an integrated voice response application for Detention Facilities, created a reporting web application in support of this effort, and obtained a software platform for developing these applications in the future.

### **Police and Detention Records Systems**

- Implemented daily transfer of Police Incidents to CrimeReports.com
- Implemented weekly transfer of Police Incidents to the Baltimore Sun web site
- Installation of Crystal Reports Developer software training for new CAD/Records system
- Installation and evaluation of Tiburon's ARS (Police Field Reporting)
- Trained Police civilian employees in FOCUS reporting software

### **Web Pages and Internet/Intranet**

- Completed redesign of aacounty.org. Site last changed in 2004
- Separated the hardware used to update aacounty.org (authoring server) from the server used to display the pages to the public (rendering server.) This decreased the load on the public server and provided a back-up server for emergency use.
- Added additional functionality to aacounty.org by:

- Adding e-mail lists whereby the public signs up to receive messages on topics of interest (including child care, Police Press Releases, Fire Press releases)
- Add the Lost and Found Pet sections whereby citizens can post pictures and information about animals they have lost or found on-line
- Included text messaging for Recreation and Parks

\* Projected before the end of FY09

## **TECHNICAL SERVICES:**

### **911/CAD**

- Installed redundant servers at RCC
- Supported 911 dispatch center temporary relocation to RCC
- Assisted Police with 911 center renovations

### **Administration**

- Coordinated VoIP pilot
- Coordinated 911 dispatch center renovations
- Coordinated staff office renovations

### **Business Servers**

- Upgraded GroupWise to version 7
- Implemented Self-Service Password Reset
- Implemented GroupWise archive system
- Upgraded server and storage hardware

### **Countyview/Cassworks**

- Upgraded Oracle Forms server
- Installed Mobile Cassworks server

### **Data Network**

- Installed Guest Wireless for Circuit Court Bar Assoc.
- Installed new Internet content filter system
- Migrated inbound Internet from Verizon to NetworkMD
- Installed Network Admission Control pilot

### **EnterpriseOne**

- Upgraded software to version 8.97
- Completed Disaster Recovery test at NY backup site
- Installed browser client

### **Enterprise Servers**

- Installed new Websphere server
- Installed new EnterpriseOne server
- Upgraded CICS/TS to version 3.2
- Completed Disaster Recovery Test to remote NY backup site
- Upgraded Munis server hardware

### **Information Assurance**

- Completed annual user recertification process
- Implemented new batch job scheduler software

## **Public Safety**

- Installed new tape backup system
- Upgraded WebEOC to version 7
- Installed new GroupWise and Novell file servers

## **TELECOMMUNICATIONS:**

- Completed the 800 MHz System capital project
- Signed the 800 MHz FCC frequency re-banding agreement with Sprint/Nextel
- Completed and the Regional Communications Center capital project
- Completed the Police 911 Center renovation project
- Completed Dept of Aging RouteMatch MDT & AVL system implementation
- Completed technical review and demonstration of Inventory Control software and hardware.
- Completed the rollout of AVL/GPS software and hardware for all County Mail Trucks
- Completed the Blackberry Enterprise Server (BES) SOP and End-user Troubleshooting Guide.
- Annapolis Neck Fire Station Construction Design
- West Annapolis Fire Station Renovation
- Department of Aging M. A. P. phone system installation
- Assist Police in set-up of sub-station at Arundel Mills Mall including voice and data connectivity
- Board of Elections telephone reconfiguration and Voicemail upgrade
- Complete conversion of Long Distance Services from ATT to Verizon
- Completed numerous office renovations and reconfigurations county-wide in cooperation with Real Estate Office and Facilities Management Personnel

## **2.3 FISCAL YEAR 2010 INITIATIVES**

### **Office of Information Technology – Fiscal Year 2010 Initiatives**

Public Safety CAD/RMS Replacement

Land Use Systems (GIS & WEB Permitting)

Document Management

Infrastructure Replacement:

Public Safety Mobile Data Computer Replacement

Countywide Telephone System

Courthouse Technology

Countywide Network Equipment

Enterprise Systems & Security Enhancements

#### **Public Safety CAD/RMS**

A comprehensive RFP has been developed, advertised and awarded. This mission critical Public Safety System includes Computer Aided Dispatch, Records management, a comprehensive and specialized Detention Center inmate management services system and, integration of a new Mobile Data system. A core team of staff has been assigned to this project from the Sheriff's Office, Detention Center, Police, Fire and OIT Departments. A detailed implementation plan has been developed and it is anticipated that this project will require 28 months to implement.

#### **Land Use**

Efforts will continue in the Land Use area to implement a Cadastral GIS (tax map) layer. The implementation of Internet based Permit Processing for Plumbing, Electrical and other Permits will continue, as will various enhancements to Land Use core computer systems.

#### **GIS**

This project will complete the implementation of the GIS Master Plan as well as the Countywide Street Centerline project. Additionally Orthophotography updates and enhancements (Lydar) will be implemented.

#### **Document Management**

##### **Business Overview**

- The County Office of Information Technology plans to develop an environment within our Intranet that better supports information management, exchange, and collaboration.
- The goal is to have an environment that is easily accessed and managed, works within the existing Intranet, supports document sharing, versioning, and archiving for both inter-departmental and intra-departmental purposes.
- It is envisioned that the environment will be flexible enough to handle numerous sizes and types of documents as well as historical and legacy items. The system will also store non-traditional information such as web links, html, sound and video.
- Each individual business unit will control content viewable internally to their own team, and externally to other county employees. Organization of content is also controlled locally within each unit.

- This investment in our Intranet will include new additions on both the infrastructure and the applications sides.
- The system will be organized and indexed so that information can easily be searched and queried.
- This new Intranet capability will also eventually support more efficient workflow automation.

### **Technology Overview**

- There are several major technology components that will need to be installed and integrated including application servers, storage servers, a database server, web applications, integration applications, and permissions management services.
- We want the environment to be extensible so it can continue to grow along with the needs of the County.
- The Office of Information Technology plans to put this infrastructure into place, provide overall management, standards, and templates.
- There are several technologies that are being reviewed and analyzed including “COTS” options from Microsoft, IBM, and Open Source. A version of the Microsoft portal is currently being tested by OIT personnel.
- Newly available technologies use web portal collaboration tools to improve information accessibility. OIT plans to leverage current investment in the Intranet to jumpstart project which will be broken into phases that can be designed, tested, and implemented in a year or less.
- The business requirements for document management, knowledge management, content management, and legacy document scanning will be gathered.

### **Infrastructure Replacement**

This multi-year project began efforts in FY05 and will continue in order to replace obsolete and unsupported computer and network system infrastructure Countywide, including upgrades to Security Policy & protecting equipment

#### **Public Safety Mobile Data Computer Replacements**

The Police and Fire Departments currently utilize Mobile Data Computers (MDC) in daily operations for a variety of mission-critical tasks. A portion of these devices are six years old and are not upgradable. Additional capability and functionality is required.

#### **Countywide Telephone System Replacement**

This multi-year project begun in FY05 plans and replaces obsolete and unsupported telephone (voice) system infrastructure Countywide. The goal is to have a single Countywide phone system instead of several disparate systems, implemented with a more cost-effective recurring cost model. A pilot project is currently in-progress with this technology.

#### **Courthouse Technology**

Replacement of Courthouse audio visual technology is a key priority for FY09. Current technology is mission critical to Court operation and trial proceedings. A comprehensive and detailed replacement analysis plan has been developed.

#### **Countywide Network Infrastructure Replacement**

This project provides for continuous annual network equipment upgrades to the countywide network that operates over County-owned fiber optic cable. Providing essential and, mission critical services to the County, Board of Education and the Community College. Increased use of video surveillance and planned VOIP technology has adding increasing demands to network services.

**Enterprise System & Security Enhancements**

This project provides for the replacement of the enhancements of Enterprise (county-wide) Server Infrastructure and Data Storage equipment as well as the continuous security enhancements necessary.

## 2.4 OFFICE OF INFORMATION TECHNOLOGY SHORT AND LONG TERM GOALS

December 2008

### Administration:

#### 6 months

1. Tactical Departmental Technology Planning (In Progress)
2. Electronic Document Discovery (Complete – pending revised Admin Pro)
3. Network Security Assessment
4. Regional E911 Communications Center (Complete)
5. Presidential Election Technology Management (Complete)
6. Fire Dept Medical Transport Billing RFP (RFP issued)
7. Courthouse: Sheriff Command Security System Upgrade: (In progress)
8. Courthouse: Courtroom Technology Upgrade
9. Human Relations Information System: Requirements Phase (Project on hold)
10. FY10 Budget Preparation

#### 1 year

1. Proficiency Advancement for Technical staff (Draft Completed)
2. Process for equipment order and inventory tagging done within 2 weeks of request (In progress)
3. SharePoint Workflow Application for Department Technical Coordinators (Complete)

### Help Center:

#### 6 months

1. IPCC (Internet Phone Contact Center) software and hardware installation. (Target Feb2009)
2. Improve time to implement equipment received to – three weeks. (On Going, working well)

#### 1 year

1. Providing automated self-help for Novell passwords (Jan 2009, in pilot Dec. 2008).
2. Reduction of PC and laptop setup and installation time through improved standardization of desktop and laptop image process and naming conventions for all department and locations. (In Progress)
3. Provision of training for technical staff in current and emerging information technology (On Going)
4. Achieve Help Center satisfaction rate of 92% (via end-user survey techniques). (In Progress)
5. Implement thin-client technology

#### 2 year

1. Provide comprehensive reporting of all desktop and laptop assets in the county (FY09)
2. Thin Client pilot and small rollout (FY09)

### Application Services:

#### 6 months

1. Implement the Inmate Sentence Diminution application (Complete, awaiting business unit acceptance)
2. Public Safety CAD/RMS Upgrade: Implementation in progress (data migration, system tailoring and configuration, test, Training in-progress).
3. Export Police incidents to CrimeReports Web site (Complete)
4. Export Police Incidents to Baltimore Sun Web site (Complete)
5. Install/configure Websphere software on new server, migrate applications to new platform and to production (Hardware Configuration complete, software configuration underway)
6. Develop redundancy for County Internet Servers ([www.aacounty.org](http://www.aacounty.org)) (Phase 1 complete. Phase 2 awaiting upgrade of Site Executive to version 4.2)
7. Convert the Dept of Aging's STATS application to access the AIM database hosted by the Vendor in South Carolina (State has moved to next calendar year)

8. Upgrade MUNIS to release 6.3a and 6.3b (Release 6.3b is in development. Test delayed by Finance due to staff shortages. New target is Spring 2009)
9. Enhancements to Animal Control Intranet Application (Complete)
10. Modify existing Enterprise One interfaces to include the new account number format (Complete)
11. Implement Munis Archiving (still in planning phases, requires business process change)
12. Support Police Pro-QA enhancement and interface with Records (on hold by Police)
13. Gather Requirements for Public Safety System interfaces to Courts Systems
14. Enhancements to Fire Training application (Implement 1st quarter 2009)
15. Implement enhancements to Community and Constituent Services Tracker application (Implement 1Q09)
16. Complete Phase 2 of MyAnneArundel (Hold due to staff departure)
17. Complete Phase 4 of DPW Right of Way project (Completed)
18. Telestaff for Fire Dept: (In Production)
19. Fire Inventory System: (Finalize requirements, pending funding)

#### 1 year

1. Review and analyze potential Enterprise Development Environment integration solutions
2. Implement Business Sales Tax, as new modules within Munis. (Last quarter 2009)
3. Upgrade Xerox forms software. (Waiting for new vendor tools)
4. Update training plan for developers.
5. Complete Internet Tank Permit Application. (Completed)
6. Modify the inspection print programs to e-mail the reports to the individual inspectors. (Complete)
7. Develop plan to Replace existing CAS Framework with new technology designed to implement Service Oriented Architecture (New framework creation underway and being utilized in production for new applications)
8. Obtain and utilize development platform to build integrated voice response applications for various County business units (Software and Hardware configured, Aging application complete, Detention center application in development)
9. Business License Module for Sales Tax Collection (MUNIS, needs v. 6.3 installed)
10. Upgrade MUNIS to take include transaction logging (now planned for 2009 due to business unit)
11. Implement Customer Information System, a rewrite of Utility Billing System (now planned for 2009 due to business unit)
12. Plan strategy and resource requirements for the next generation of the Benefits Database Lifecycle (business unit delayed until 2009)
13. Finalize Requirements for effort to enhance Supply, Vehicles, and Building Inventory Access Applications for Fire Dept. Work plan for technical solutions.
14. Master File Name Cleanup- Project to clean up police, detention, and Sheriff Master Name File in preparation for migration to new platform
15. Convert Focus reports for Police, Detention Center, and Sheriff to Crystal Reports
16. Recordation Tax System application support (Awaiting RFP/IFB decision, go/no-go)
17. Implement Parks Inventory Project
18. Implement Certificate of Occupancy workflow application for I&P
19. Implement final phase of MST subdivision upgrade
20. Implement Environmental Grading Infrastructure Inspection application
21. Complete phase 5 of DPW Right of Way project
22. Data migration testing from current Tiburon database to new Tiburon database
23. Develop a SharePoint site to facilitate the management of OIT Software Development, enable collaboration with Business units, track OIT time to project activities, and provide executive visibility to project milestones

#### **GIS:**

##### 6-month Goals:

1. 2007 Orthophotography received and deployed (Complete)
2. CountyView enhancements (Complete)
3. Street Centerline Enhancements
  - a. Routing requirements for CAD\RMS System (In progress - 40%)
  - b. Street database modifications for CAD\RMS System (In progress - 45%)
  - c. CassWork codes updated to provide link to DPW Computerized Maintenance Management System (In progress - 85%)
4. Deploy CountyView 3.1 Build 201 (In progress - 30%)

- a. Laptops 46 of 135 complete including image for Police 516 MDC's
- b. Desktops 89 out of 349 complete
- 5. Planimetric 2007 Update (In progress – 85% complete)
  - a. Vendor has delivered all four areas
  - b. County has reviewed all 4 areas and returned for correction
  - c. Vendor has redelivered 3 areas for acceptance
- 6. Sever Migration and Upgrades
  - a. Deploy ArcGIS 9.3 (In progress - 85%)
  - b. Deploy PZGIS2 Server (Complete)
  - c. Deploy DPWGIS2 Server (In progress - 95%)

1-Year Goals:

- 1. Structure Addressing
  - a. Obtain a grant to fund development and acquisition of structure addressing and building footprints updates to support E911 call taking. (Complete)
  - b. Field verifications and Deliveries by Vendor
    - i. Pilot Area – Delivered for County Review
    - ii. Phases 1 and 5 – Estimate March 2009
    - iii. Phases 2 and 6 – Estimate May 2009
    - iv. Phases 3 and 7 – Estimate July 2009
    - v. Phase 4 and 8 – Estimate September 2009
    - vi. Data Finalization and PSAP Installation – October 2009
- 2. MyAnneArundel Phase II (Placed on hold due to limited programming resources)
  - a. Incorporate Property Geodatabase and tax assessment info
  - b. Interactive Map (Zoom in, Zoom out, turn off/on map layers)
  - c. Closest fire hydrants
  - d. Subdivision Activity
  - e. Permit Activity
  - f. Street Centerline Routing used for distance calculations
- 3. MapOptix 6.0 Upgrade – Preparing work plan for GeoNorth installation.
- 4. Terminal Server for CountyView implemented (Awaiting Technical Services)
- 5. Future CountyView Enhancements – Existing PO includes requirements gathering
  - a. Police and Fire Incidents / Records integrated
  - b. CIP and PIMS Integration – CIP in PO and PIMS requirements gathering
  - c. AVL info display (most current record) – PO includes requirements gathering
- 6. Continue to provide Technical Assistance for CAD\RMS mapping needs
  - a. Fire Response Areas
  - b. City Code Areas
  - c. Police Response Areas
  - d. Alias Street Name Table
- 7. Continue to support increase use of GIS technology.

**CABLE Television:**

6 months

- 1. Monitor State and Federal Legislative initiatives regarding CATV Franchising (In progress)
- 2. Severna Park Fiber Project, Build the County I-NET to include the 5 Severna Park Elementary Schools and the Severna Park Library (In Progress)
- 3. Crofton Fiber Project, Build the County I-NET to include the 5 Crofton Elementary Schools. (In Progress)
- 4. School System Media Center (In Progress)
- 5. 3 Traffic Intersections and the PG County Hub Connection
- 6. Annapolis Fiber Project, 7 Elementary Schools, 2 Fire Stations, Maryland Hall, Bates Senior Center, Library
- 7. Upgrade County Council Video Production capability

1 year

- 1. Management of PEG capital improvements

## Technical Services:

### 6 months

1. Enhance redundancy for [www.aacounty.org](http://www.aacounty.org)
2. Install new enterprise server Job Scheduler software
3. Implement EnterpriseOne browser client pilot
4. Migrate from Verizon Internet to NetworkMD
5. Upgrade CICS/TS from v2.3 to v3
6. Upgrade Oracle Reports hardware and software
7. Implement Radio IP VPN
8. Implement IP Telephony pilot

### 1 year

1. Upgrade mainframe DB2 from v8 to v9
2. Implement backup Cassworks server
3. Upgrade z/OS from v1.9 to v1.10
4. Implement Wireless network in Heritage conference rooms
5. Activate diverse path to Comcast Gambrells
6. Implement VMWare at EOC
7. Implement disk-to-disk offsite backup for SANs
8. Expand SAN at Arundel Center
9. Implement IP Telephony phase 2 for OIT

## Telecommunications & Peg Studio:

### 6 months

1. Complete Phase V and overall 800 MHz System Project. (Target Feb 2009)
  2. Complete 800 MHz FCC PFA Frequency Re-banding Project. (Target Jan 2009)
  3. Negotiate 800 MHz FCC FRA Frequency Re-banding Contract Document. (Target Jan 2009)
  4. Renovation of the Police 911 Center to include CPE upgrade. (Complete)
  5. Working with Annapolis Police to request \$450,000 from the ENSB for the purchase of new CPE. (In progress)
  6. Preliminary meetings with Sprint/Nextel to find a solution to replace existing outdated scanning equipment and software for Non-Capital Fixed Assets as well as meet the daily needs of agencies such as the Detention Center, Fire, Police, etc. (On Hold until Purchasing makes a decision to proceed with purchase and implementation)
  7. Purchase and installation of new programming scheduling software. (In progress)
  8. Rewire existing Master Control room
  9. Addition of display monitors in studio waiting area. (In progress)
  10. Dept of Aging Route Match MDT & AVL system. (In-progress)
  11. Provide Technical Specifications and Advise Dept. of Public Works Waterline maintenance in the purchase and install of AVL/GPS units for 16 of their work vehicles. (On Hold due to purchasing freeze)
  12. Assist Police in set-up of sub-station at Arundel Mills Mall including voice and data connectivity. (In Progress)
  13. Millersville Landfill Admin building expansion including temporary relocation of personnel to trailers for duration of construction. (1Q09)
  14. Board of Elections telephone reconfiguration and Voicemail upgrade. (In progress)
  15. Develop RFP for Radio System Maintenance
  16. CID—Reprogramming of phone system to better handle current personnel configuration. (1Q09)
  17. Fire HQ—Create and setup auto-attendant for main incoming numbers. (1Q09)
  18. Renovation of Pasadena Senior Center—requires voice and data cabling and relocation of existing services due to reconfiguration of space by landlord. (1Q09)
  19. Purchase, program and activate AVL/GPS Nextel Phones in all 4 Mail Trucks. (Completed)
- Training for devices and desktop software as needed. (In progress)

### 1 year

1. Develop RFP for County-wide telephone system. (Developing needs assessment and specification.)

2. Vendor selection complete for county-wide telephone system replacement. (In Progress – we are looking at a technology migration from analog Centrex to IP Centrex. An IP Centrex trial is being looked at for 1Q09).
3. Complete Backup E911 Regional Communications Center. (In Progress with target date of 2Q08)
4. Police K-9 Training Facility. (Building Complete...Still working on Connectivity to main building for voice and data. (1Q09)
5. Police Impound Lot Re-location. (Construction and relocation Complete---awaiting specs for security system and voice and data requirements if any. (1Q09)
6. Police Property Storage Expansion. (Construction In Progress—Temp relocation of existing voice and fiber completed Aug 08)
7. Annapolis Neck Fire Station Construction Design. (Preliminary Voice and Data Cabling Complete)
8. Continue review of Telephone database for unused circuits and telephone numbers. (Ongoing)
9. Finalize and implement solution to improve Sprint / Nextel cellular coverage within EOC. (Complete)
10. Purchase of new production equipment for televising County Council meetings. (In progress)
11. Purchase of new ENG cameras to replace the Panasonic AJ-D700s. (In Progress)
12. Purchase virtual set software for County produced productions. (On Hold)
13. Remove/retire all obsolete video equipment from inventory. (In Progress)
14. New Eastern Police Substation design reviews. (1Q09)

## 2.5 SPECIFIC STRATEGIC TECHNOLOGY PLAN GOALS

### 2.5.1 TACTICAL GOALS AND DIRECTIONS

#### 2.5.1.1 Information Technology Governance

1. Re-focus mission to prioritize all departmental technology requests (in-progress)
  - Decision Authority
  - Cost/Benefit Analysis(appendix 2)
2. Enforce technology standards (on-going)

#### 2.5.1.2 Information Technology Organizational Structure

1. Implement Proficiency Advancement Program (FY03-ongoing)
2. Review salary/compensation levels for OIT staff (on-going)
3. Implemented Competency/skill Plan (FY04-ongoing)

#### 2.5.1.3 Infrastructure Improvements/ Lifecycle plan

1. Upgrade 800 MHz Radio System (Complete)
2. Implement PC replacement program/thin client (ongoing)
3. Continue & support Countywide area network access
  - Plan/Utilize new fiber optic network (ongoing)
4. Enhance County building data cabling network (ongoing)
5. Security Enhancements (ongoing)
6. Mobile/Wireless communications
  - DPW Infrastructure (ongoing)
  - Inspection & Permits (ongoing)
  - Mobile Data computing (Public Safety) (ongoing)
7. Server upgrades (on-going)
8. Voice Communications Infrastructure Enhancements (planned FY09-FY12)
9. Document Management (planned FY07-FY12)
10. Detention Center Inmate IVR (FY09)
11. Courthouse Technology Upgrade (FY09-FY11)

#### 2.5.1.4 Enhance Information Technology Management and Control

1. Continue identifying and implementing OIT standards (Desktop HW/SW, Network, Database, Integration) (ongoing)
2. Continue identifying and Implementing Administrative Procedures and Standard Operating Procedures at departmental levels, track and train.
3. Help Center enhancements
  - Problem and Change management
  - 1 stop help (ongoing)
  - Internet/Intranet countywide administrative network tools (ongoing)
  - Knowledge base for user and technician reference (Heat), Web (ongoing)
  - Computer inventory integrate as county asset management (ongoing)

### **2.5.1.5 Enhance Technology Training**

1. Information Technology staff (on-going)
2. All County staff (ongoing)

### **2.5.1.6 Geographic Information Systems (GIS)**

1. Implement usage, distribution and maintenance plan (ongoing)
2. Desktop GIS software tools countywide, training (ongoing)
3. Define & implement GIS Master Plan (complete FY07)

### **2.5.1.7 Implement Application Technology Initiatives**

#### **Office Automation**

1. Internal/External Email capability (ongoing)
2. Interactive voice response system replacement (ongoing)
3. Office, scanning, bar codes, fax, business system integration (ongoing)

#### **Administration**

1. Countywide Citizen Contact Web System(311 System) (Complete)
2. Purchasing - Internet e-commerce based procurement (ongoing)
3. Elections Office – New State mandate voting machine system  
And Statewide Voter Registration system (complete FY05/FY06)
4. Asset Management/Inventory/Bar Code (Complete)

#### **Human Services**

1. Aging – Internet based service payment processing, Transportation Fleet management system (FY09)
2. Recreation & Parks – Park Asset/Inventory (FY09)

#### **Human Resources**

1. Benefits, analysis tool and interfaces (FY05-06)
2. Employment Applications – Receive/process from Internet (new) (complete FY06)
3. ADP EV3 Upgrade (complete FY05)
4. Time & Attendance Upgrade (complete FY05)
5. Implement Employee self-serve and other ADP modules (FY06 & beyond)
6. HR, Payroll, Time & Attendance RFP (RFP) (FY09)
7. Succession Planning, Training & Performance Mgmt (RFP) (FY11)

#### **Land Use**

1. LURE Initiative Projects (5) (ongoing)
2. OIT Lure Programs, Consolidated Property Geodata Layer (FY04-07ongoing)
3. Enhancements to Snow Removal Web Applications (FY09-FY11)

#### **Public Safety**

1. Integrated Detention Center/Police/Fire/Sheriff records (FY09-FY11)

- management (replacement)
- 2. Computer Aided Dispatch (replacement) *(planned FY09/FY11)*
- 3. Mobile Data Computing Police/Fire (new) *(ongoing FY09/FY11)*
- 4. Fire/- Shift Scheduling (new) *(FY04-FY06)*
- 5. Detention Center – Inmate management (new) *(planned FY09/FY11)*
- 6. Fire – Building Plans (new)
- 7. Police – Live Finger Print Scan (new) *(complete FY06)*
- 8. Police – Crime Analysis (new)
- 9. Courts – Jury System (replacement) *(Complete FY05)*
- 10. *Reverse 911* *(Complete FY08)*

**2.5.1.8 Data Architecture**

- 1. Develop business and geographic schemes and data views *(ongoing FY05/FY06)*
- 2. Implement standard query utility *(ongoing FY05/FY06)*
- 3. Software *(ongoing)*

## **SECTION 3 - INFORMATION TECHNOLOGY PLAN SUMMARY**

### **3.1 Technology Overview**

The County's technological improvement strategy is focused on the following elements:

#### **3.1.1 Management Controls and Processes**

The focus here is on improvements in overall technology planning for the County with greater emphasis on participation by County Departments, decision-making authority and cost/benefit analysis.

Another key element of this strategy is focused on developing and enforcing technology standards, quality assurance, service level agreements, training, and Help Center enhancements.

#### **3.1.2 Organizational Structure and Staffing**

The emphasis here is providing adequate IT staffing, staff compensation and professional studies and Cabinet level representation in order to facilitate business process improvements COUNTYWIDE via technology.

#### **3.1.3 Infrastructure Enhancements**

The emphasis here is to provide and enhance the technological infrastructure (as well as contingencies) for agencies to utilize in making quality operational improvements, including enhancements to data access.

#### **3.1.4 Business Process Improvements through Applications Software**

The emphasis here is on applications in major business process groups, identified as: Office Automation, Administration, Human Services, Human Resources, Land Use and Public Safety.

## **3.2 SUMMARY OF SPECIFIC TACTICAL GOALS AND DIRECTIONS**

### ***3.2.1 Information Technology Governance Enhancements***

The focus here is to implement and improve the County-wide Information Technology governance structure. In order to improve the integration of technology and County business goals.

- Re-focus mission to prioritize all departmental technology requests
  - Decision Authority
  - Cost/Benefit analysis
- Enforce technology standards

With implementation of these changes, it is anticipated that overall County planning can be improved and be integrated into strategic technology planning for the County.

### ***3.2.2 Information Technology Organizational Structure***

- Cabinet level authority/responsibility (CIO)

The CIO would be in a position to advance County business goals through enterprise-wide technology projects and enhance cost/benefit analysis.

- Identify Competency levels

As the staff attritions, each vacancy is reviewed in order to optimize staff competency resource requirements, adjustments are made accordingly for present and future technological knowledge.

- Re engineering OIT organization

This objective is to continue the internal reorganization of the Information and Technology Office, to meet technological changes and competencies required and continue as a service organization that meets countywide objectives and administrative goals. The organization structure will be continually reviewed in order to ensure efficiency and effectiveness given changing County and technological, goals and objectives.

- Continue Proficiency Advancement Program

A detailed implementation plan was submitted with the FY2002 IS budget request in order to implement the Proficiency Advancement Program for Information Technology positions. Proficiency Advancement is a County program implemented in other Departments. Information Services has lost several experienced staff members during the past year due to the low salaries available and lack of career growth opportunities with the County. The Proficiency Advancement Program begins to address these two major issues for Information Technology

staff. Information Technology position salaries should be studied and raised to be comparable with industry averages. We are even losing staff to other local governments as well as the federal government. The Program will implement six new class structures or groupings for employees with three position classifications contained in each structure. This will give staff the opportunity for career growth and rewards based on job performance.

The County continues to be at significant risk of losing experienced Information Technology staff members due to low salaries available (as compared to the technology industry) and nonexistent career growth opportunities. We will also find it difficult to attract new staff members to replace those lost if we do not have compensation levels and programs to retain staff based on performance rewards.

Status: Implementation of this program is now in progress by the Office of Personnel.

- Salary and compensation levels for Information Technology staff

The County addressed salary and compensation level issues with Bill 39-01 and with various Administrative Procedures. Information Technology staff in the County are, on average, under compensated by approximately 10% - 15% based on industry data that is available. Information Technology position salaries should be studied and raised to be comparable with industry averages especially as **core competencies are identified**. During the past year, we have lost staff for promotional and salary increase reasons to other local governments as well as the federal government. A separate classification structure for Information Technology grades and positions should be established in the County.

The County continues to be at significant risk in losing experienced Information Technology staff members due the reduction of head count, forcing internal training and constant re-engineering of technical staff. Due to the competency levels expanding by the county needs the staff become valuable for they're gained competency level and go elsewhere due to low salaries available (as compared to the technology industry) and nonexistent career growth opportunities. During the next 2-5 years, Information Technology will experience a projected 20 – 30% retirement rate of existing staff. We will also find it difficult to attract new staff members to replace those lost if we do not have compensation levels and programs to retain staff based on performance rewards. The County needs to compensate Technology Staff based comparatively to industry offerings. ***The county cannot afford the high price of outsource alone, loss of controls of price increases, and incompetence of delivery, and “risk of constant industry turnover in companies”*** with off the shelf unsupported products. The core competencies are always required to support inside and outside sources for OIT infrastructure, support, maintenance, and advancement. The “combination” of inside competency and outsourcing must be crucially balanced.

### ***3.2.3 Infrastructure Improvements-Life Cycle Replacement Program***

***Priority is given to the replacement of current mission critical systems due to technology obsolescence. Refer to Appendix 3 for a complete list of technology infrastructure and associated life cycle obsolescence and replacement plan.***

- Life Cycle Replacements:
  - Upgrade 800 MHz Radio System

Capital Project #C504400 has been approved for this purpose and this project is in progress under the management of the County Telecommunications Office. The RFP was issued in June of 2002 and an award was made in December 2002.

- GIS countywide Master System  
Implement GIS Network to accomplish centralized GIS standards, data sharing, network and server sharing, reduce duplication, and further expand usage and easy access through training, GIS tools, and desktop usage

- Land Core Initiatives  
Implement Land Core upgrades for easy access, better collaboration, reduce duplication and stovepipe operations usage of all land core data. Implement data warehouse strategy for better tools, reporting, tracking, viewing, and collaborative data exchange.

- Improve home access/remote dial-in capability/wireless/laptops/PDA's

This technology utilizes a series of complex file servers to “serve” applications to PC workstations connected and/or dialed into the County network. The actual software application is loaded on the servers – and not the individual PC workstation. This provides increased flexibility in application enhancements and support. Many County departments, as well as OneWorld users would benefit from this technology. This would also enable County staff, dialed into the County network from home, to access all County-provided applications, such as OneWorld, Munis, Land Use and Office Automation Applications. This project would also provide funding to research, test products and implement foundation products and services for wireless PC workstation connectivity.

- Video Conferencing

This technology will be used in conjunction with existing County infrastructure. In future years we plan to expand video conferencing into our technology training rooms (3) in an effort to increase training courses offered to County personnel. Utilization of this had caught on, and will become part of our normal infrastructure planning.

- Continue PC replacement program as part of infrastructure planning

This project will continue in operating funds have been allocated in the OIT budget to annually replace approximately one-third of all County PC's. This provides for a predictable and fixed equipment replacement cycle. This also includes utilizing thin client technology where appropriate.

- Expand Countywide area network access
  - Plan/Utilize new fiber optic network

. As a result of approved CATV franchise agreements, the County is proceeding with Phase III of the fiber optic network.

- Identify through study new and enhanced County requirements. Review with Countywide Infrastructure Planning considerations.
- Security

This project will provide additional firewall security devices to various County locations, upgrade of the Internet monitoring software, and provide professional consulting and engineering support services for various security functions. Without adequate Security, the County is vulnerable to penetration and unauthorized access by intruders. We must also monitor appropriate Internet site access for County employees and we must continuously monitor and expand security capabilities to respond to ever increasing threats from outside sources.

- Mobile/Wireless communications

This project provides for mobile/wireless communications and infrastructure. Implementation is countywide, in DPW, and Public Safety. This has become a standard infrastructure component in the county plan.

- Server upgrades

An obsolescence/replacement cycle for all County file servers is also essential in order to maintain technical currency, reduce hardware obsolescence and provide increased application functionality as well as timely service and availability across the county for internal and external customers and users. We are presently implementing Server Virtualization Technology.

- Fire Suppression

This project upgraded fire suppression services in the Arundel Center Data Center(s) and Emergency 911 Data Center and is part of the infrastructure plan.

- Disaster Recovery Hot Site (Business Continuity)

This project provides professional, standard disaster recovery and avoidance hot site services. A hot site provides full computer and network services restoration from a remote facility for major

data center equipment under contract in the event of an activated emergency, such as fire or other damage to the Arundel Center data center. These hot sites can often be activated in a day's notice. County services could be restored extremely fast as opposed to the estimated 2 weeks that the current disaster recovery plan outlines. The County has a significant investment in mission critical computer and network equipment, such as its Tax/Utility Billing, Finance and Administration, Land Use and Public Safety records management systems and major revenue streams. This has become part of our infrastructure plan.

- Voice Communication Infrastructure Enhancements

This project comprises: (1) Completion of Bringing the Greenbury Point radio towers online (to be available for both public and private use), (2) Implementing Wireless applications across the public safety and land use and business departments and (3) thirdly identifying and creating a voice life cycle replacement plan for current countywide phone systems.

- Document Management

### **Technology Overview**

- There are several major technology components that will need to be installed and integrated including application servers, storage servers, a database server, web applications, integration applications, and permissions management services.
- We want the environment to be extensible so it can continue to grow along with the needs of the County.
- The Office of Information Technology plans to put this infrastructure into place, provide overall management, standards, and templates.
- There are several technologies that are being reviewed and analyzed including "COTS" options from Microsoft, IBM, and Open Source. A version of the Microsoft portal is currently being tested by OIT personnel.
- Newly available technologies use web portal collaboration tools to improve information accessibility. OIT plans to leverage current investment in the Intranet to jumpstart project which will be broken into phases that can be designed, tested, and implemented in a year or less.
- The business requirements for document management, knowledge management, content management, and legacy document scanning will be gathered.

### ***3.2.4 Enhance Information Technology Management and Control***

- Continue fine-tuning and updating and publish standards, policies and procedures form Administrative Procedures, to standard operating functional procedures for all of OIT. (Desktop HW/SW, Network, Database, Integration, GIS)

Standards for all technical areas have been published and are being strictly enforced. A major benefit of standards will improve County technology integration and compatibility.

- Help Center

The Office of Information Technology has established the Help Center as a single point of contact for problem resolution using a centralized knowledge-based database for first and second level support services.

Currently, the HC responds to approximately 1,400 calls for service a month. As technologies and applications emerge, the level of support calls will increase in direct ratio with the decrease in time available for solving problems. This is in addition to direct centralizing of all service calls to the HC. Identification of Administrative and Automation tools to assist in change and problem management technology such as Web tracking, proxy support and functions have been integrated into the HC as it continues to evolve into a “one-stop shop” for services. The growth rate of our original systems within 2 years has tripled, while reducing county staff can only be addressed with identification of core competencies, appropriate sizing and outsourcing, for this most important countywide service to keep the network and systems available to all internal and external customers countywide.

- Quality Control and Assurance, Problem and Change management and Audit Reporting

This software assists Information Technology in the management, control and reporting of hardware, network and software installation, maintenance and enhancements. Recommendations from our Strategic Technology Plan as well as an independent Quality Assurance Study highlighted a requirement to implement management controls in this important area. All hardware, network and software changes as well as problems would be channeled into this system. Benefits such as improved reporting and accountability would be derived, as well as lessons learned via a knowledge database method to be deployed. The competency of county staff and utilization of administrative QA software is the requirement for maintaining and initiating quality programs and security for our systems and user base. The reporting and controls cannot be compromised and can be detrimental to programs currently in progress.

### **3.2.5 Enhance Technology Training**

- Information Technology staff

OIT is committed towards more formalized training in the WEB technologies and network areas, especially due to the diminishing of county positions. It is even more crucial to train to fill gaps of technical competencies due to reduced positions. OIT is committed to maintain core competency skills and training in newer technologies for all staff members, as well as to provide continued certification training. For FY2007, we will continue this commitment, career and competency planning.

- All County staff

With recent OIT infrastructure and staff competency enhancements, the County is now poised to continue expansion into WEB technologies. However, more intense technology training should now be offered to staff in all County Departments. The County through OIT leadership is positioned to enhance business processes for improved efficiencies and cost effectiveness. An example is the Certifications of GIS OIT core team for teaching, and Professional Classification. Consideration has been given towards consolidation of all technology training by implementing on line cost affective training through our PC replacement program to county employees as well as holding in county training service for specialized users and applications such as GIS. We will continue taking advantage of such cost effective and user needed and requested programs.

### **3.2.6 Geographic Information Systems (GIS)**

- Implement the GIS Network, distribution and maintenance plan

OIT and the GIS Manager have identified the GIS network, applications and distribution plan. The formal execution of these systems will continue to grow, and be part of our advancement and maintenance plan. GIS standards and Administrative Procedures for countywide users have been implemented.

- GIS desktop software and application maintenance tools.

Geographic Information Systems (GIS) desktop software has been identified and started to be implemented to County staff in Departments such as: Police, Fire, Aging and Health. This software will allow access to pertinent GIS data layers. The Strategic Technology Plan that the County completed highlighted many requests from Departments to utilize these assets. Software that is being acquired is an ESRI based product as our county standard in addition to an Internet version of County View (Mapoptix) that is available. Extensive Training and implementation support is provided through the OIT office, GIS department.

## **SECTION 4...INFORMATION TECHNOLOGY ARCHITECTURE**

### **4.1 Architecture**

Anne Arundel County, Maryland's information technology infrastructure is dynamic and continually evolving to adapt to new business requirements and technologies. As the population of Anne Arundel County, Maryland continues to grow and the citizens demand for programs and services increases, substantial investment in information technology is unavoidable. Without it, the County is faced with the untenable choice of hiring additional staff or providing diminished levels of service.

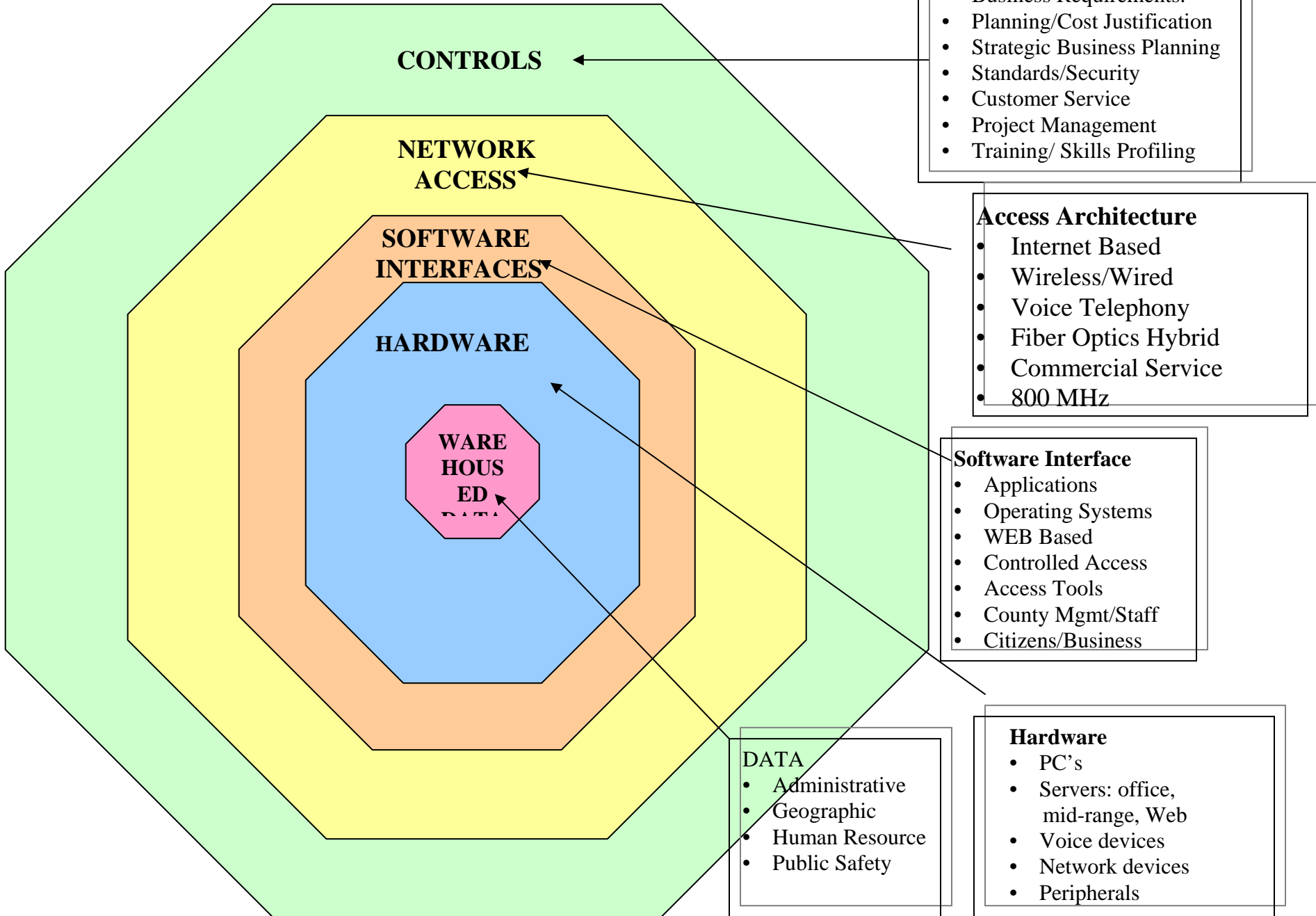
This section of Anne Arundel County Maryland's Information Technology Plan identifies the major hardware and software architecture currently utilized and defines the intended direction of future acquisitions.

### **4.2 Architecture/Service Model**

The following illustration represents the enterprise technology Information Architecture Service Model.

See Illustration on following page – this page left intentionally blank.

# OFFICE OF INFORMATION TECHNOLOGY INFORMATION ARCHITECTURE SERVICE MODEL



The table below illustrates a hierarchical subdivision of the various information technology components that support the County's mission and the associated business. These components constitute the architectural infrastructure currently in place.

- **Level 0: The mission** *The Office of Information Technology will deliver quality and innovative information technology solutions for agencies and those doing business with Anne Arundel County Maryland*

#### **4.3 The Business Process Enterprise Access (INTEGRATED/WAREHOUSED DATA)**

##### ***Administration and Finance***

- Electronic Mail
- Office Applications (Word-processing, Spreadsheet, Database, Presentation, Query)
- County WEB Site – Internet & Intranet
- Finance
- Budget
- Tax & Utility Billing
- Customer Service & Citizen Issues
- Vehicles

##### ***Geographic***

- Land Use
- Property (Consolidate Property Information, Parcel Map)
- Map Based Infrastructure (CountyView, MapOptix, Scada, CassWorks)
- Permits Processing
- Inspection Processing
- Subdivision Review
- Modeling ( Stormwater, Utility, Traffic)
- Zoning Enforcement
- License
- Small Area Planning
- Comprehensive Planning
- Traffic Management

##### ***Human Resources***

- Payroll
- Personnel
- Benefits
- Leave Administration
- Employment Application/Recruitment
- Training
- Unions
- Health (GIS, Clinical, Environmental, Disaster, School Nurse)
- Recreation & Parks (Child Care, Facility, Participants, Programs)
- Aging (GIS, Client Tracking, Transportation, Senior Centers)

***Public Safety***

- Records (Police, Fire, Detention Centers, Sheriff)
- Manpower/Resource Planning
- E911 Dispatch (Police, Fire, Sheriff, Animal Control)
- GIS, Map Based Routing
- Vehicle Status
- Jury Selection

The illustration below represents an *integrated* Enterprise access view of all County data.

See Illustration on following page – this page left intentionally blank.

OFFICE OF INFORMATION TECHNOLOGY

***INTEGRATED***

ADMINISTRATIVE



GEOGRAPHIC



HUMAN RESOURCES



PUBLIC SAFETY



**DATA ACCESS**

#### **4.4 Hardware**

- Desktop PC's, workstations, handheld PC's
- File Servers (small, mid range, large, WEB enterprise)
- Voice devices (telephones, 800MHz radios)
- Network Equipment (voice & data)
- Peripheral devices (printers, fax, digital map plotters)

#### **Hardware Processors**

Processors are the major equipment used to operate the applications and application tools. Anne Arundel County's processor architecture includes enterprise, mid-range, Local Area Network servers, as well as workstation and desktop processors. The County also utilizes State and other non-County processors as necessary.

*Desktop PC's and Workstations* – Increased utilization of PC technology by all Anne Arundel County departments has facilitated the streamlining of operations and improved the delivery of services to citizens. Information Technology (OIT) continues to prescribe 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. For FY2007, a 4-year PC replacement cycle will continue (pending – plan to request change back to 3-year cycle). All County PC's are centrally procured from existing contracts to achieve economies of scale and consistent hardware platforms throughout all departments.

Local printing is accomplished through a large inventory of local and networked printers, primarily Hewlett Packard DeskJet and LaserJet varieties. Centralized output is available from the Arundel Center Data Center via high volume laser print systems.

*Enterprise WEB Server* - Anne Arundel County supports requirements for enterprise (or mainframe) business applications with a large IBM computer utilizing IBM's Z/OS operating system. In addition, several RS/6000 (AIX operating system) and AS/400 (OS/400 operating system) mid-range servers are utilized for application specific processes.

*Network Servers* - Anne Arundel County currently supports two LAN operating systems: Novell NetWare (version 5.0 and above) and Windows 2000/NT/XP Server (version 4.0).

#### **4.4 Software Interfaces (Applications)**

- Business and Geographic Application Systems
- Administrative/Office Systems
- Spatial Analysis/GIS Applications
- Programming/Development Tools (WEB based)
- Database Management Systems
- Office Automation/Workflow Software
- GroupWare/Collaborative Software
- Document Management

- GIS Software
- Operational Support – Help Center Software
- Security
- Data Query Tools

## **Applications**

All elements of the information technology architecture have been acquired to support Anne Arundel County, Maryland's overall mission and departmental processes. Applications are those elements that directly support the delivery of services and the associated administrative functions required to ensure that those services are timely, efficient and cost-effective. Anne Arundel County, Maryland has a vast inventory of PC's, mid-range, enterprise servers and communications equipment. New applications and application enhancements are constantly being evaluated, developed, acquired and implemented as older legacy applications retire. A brief example of the County's application architecture and some recent developments are described below.

*Application Systems* - Anne Arundel County, Maryland has recently replaced its Financial System with a commercial client-server software package from Oracle (JD Edwards). Also the County's Tax/Utility Billing systems were replaced with a commercial package from MUNIS. The legacy Payroll system was replaced with a modernized system from ADP.

*Office Systems* – The County has implemented Email software that enables County and Internet capability simultaneously. Also, Microsoft Office has been acquired for all PC's in the County.

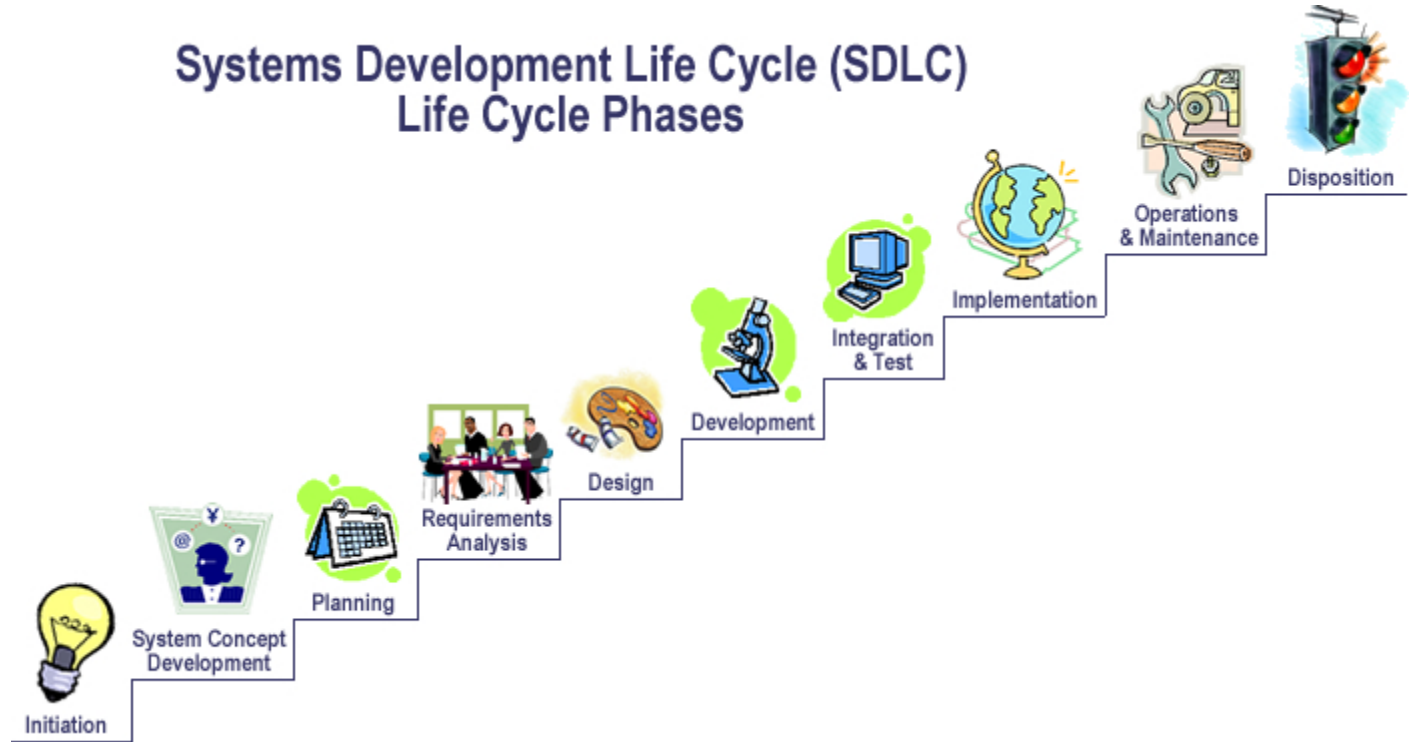
## **Application Tools**

*System Development Life Cycle Process* - The Office of Information Technology's System Development Life Cycle (SDLC) is a series of detailed tasks, procedures, and documents that are used during the technical development of any information system project undertaken for Anne Arundel County Government. These include projects that are developed solely in-house, those developed solely by third parties or combinations of the two, and projects on all platforms. As all projects are not created equal, it is understood that steps that are necessary and appropriate for a full-scale development project would be an impediment, not an aid, to projects that consist of a simple change to an existing system. Additionally, some projects are the direct result of legislated changes and the findings of feasibility studies and cost benefit analyses would have no effect on the decision to proceed. To address these realities, three distinct Life Cycles Paths are defined:

- Full SDLC - Used for major projects developed either in-house or by contractors. These may be new projects or re-writes of existing legacy systems.
- Mandated SDLC - Used for projects mandated or legislated where some Full SDLC steps are unnecessary.

- Minor Change SDLC - Used when a minor change is required to an existing system. The change does not effect the structure, logic or basic functionality of the system

Each of the SDLC Paths is divided into ten phases.



Within each defined SDLC Path, it is understood that not all phases or steps are required for all projects. However, it is necessary for the Project Team to address each step, even if it is to note it as not applicable.

Each phase as described in the SDLC document is broken into five topics. These are:

- Purpose - Describes the purpose of that phase as it related to the SDLC Path
- Tasks and Activities - Details the tasks required to complete that phase
- Deliverables - Details the deliverables, be they documents or system components
- Approvals - Lists the approvals required to complete that step, and the nature of that approval (verbal or written)
- Templates - Provides links to templates for documents used during that phase of the appropriate SDLC Path

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 the latest generation object oriented languages and tools, such as JAVA and WebSphere. This approach will continue as additional client-server applications are developed and as Commercial-Off-The-Shelf (COTS) system components are purchased. Older generation languages and tools are now utilized only in a few specific development or maintenance efforts.

*Relational Database Management Systems (RDBMS)* – The County uses several database management systems to support business applications. On the Enterprise Server, DB2, Oracle, and VSAM are used. DB2 is also the preferred business DBMS (Informix is also utilized) on mid-range servers and client-server applications and Oracle/SQL Server are the preferred geographic DBMS to use. RDBMS design activities, such as creating entity-relationship diagrams, the data dictionary, process models, logical and physical data models, and the database definition are supported through various tools and utilities.

*Office Automation/Workstation Software* – County office automation standards have been updated. GroupWise for Email, MS Word for word processing (Corel WordPerfect will continue to be used where required), MS Excel for spreadsheets, MS Access for workstation database management, MS PowerPoint for presentations, MS Internet Explorer for Internet access, Norton Anti-Virus for PC virus protection, NS Elite for 3270 access, Client Access for AS/400 access, Blue Vista or ICE/TCP Emulation for RS/6000 access.

*GIS Software* – The ARC/INFO software provides high-end workstation tools and functionality to the GIS Analyst. MAPINFO, MAP-OPTIX and COUNTY-VIEW software are also utilized where appropriate on mid-range desktop PC's. This software integrates visual or graphic data in the form of maps with descriptive or attribute information from an organization's internal databases. These tools also are used for analysis and access to data.

*Help Center (HEAT) Software* – The Information Technology Help Center provides County employees a centralized point of contact for computer support. Using a combination of call routing and sophisticated knowledge management software, Level-1 Technicians will resolve support calls or route to the next level as appropriate.

#### **4.6 Network**

- Local Area Networks
- Wide Area Networks
- Internet/Intranet Connectivity
- Other External Connectivity
- Private Fiber Optic/Frame Relay
- Analog/Digital Telephone Connectivity
- Wireless/Mobile Voice/Data Connectivity
- The Physical Plant
  - Wiring (Ethernet)
  - Hybrid: Private Fiber Optics/Tariffed Frame Relay Service

## **Enterprise Communications Network**

The Enterprise Communications Network for Anne Arundel County Government serves as the voice and data communications backbone, which provides Countywide access to information technology resources. Additionally, the Network provides Cable Television interconnect facilities for all County CATV subscribers regarding the County Public, Education and Government Television channels (PEG).

*Voice Telephone:* Commercial Centrex services are in use on an enterprise wide basis. A replacement program and new life cycle plan is being performed to meet countywide transition of this growing and advancing technology. Currently all County facilities are interconnected via various strategically placed Centrex switches located in the County providing the “222” exchange service. The commercial service provider acts as the County’s private branch exchange. Individual County buildings have wired telephone systems connecting the location to the service; some buildings have multiple systems depending on size and other factors. The study and recommendations will be published and as a result the life cycle replacement plan will be published for project introduction.

*Cellular Telephones:* Commercial service is provided and contracted for on an as-needed basis. Presently, due to cellular technology, integration into the County’s “222” exchange is not possible. This will be looked at in the upcoming study and telephony digital transition countywide plan.

*Pager Services:* Commercial service is provided on an as-needed basis. As a result of transition of technology, this will be included in the upcoming telecommunications life cycle study and plan.

*800 MHz Radio System:* The County operates a private 800 MHz radio communications system for Public Safety and General County usage, with approximately 3,000 radios connected to the system over four (4) microwave towers. The County is close to completion of the multi phase competitive RFP for a new 800 MHz system, awarded to Motorola Inc., When the 5 Phase project is completed, the new Motorola Astro© system will be a 10 Tower site digital system utilizing current communications technology. All existing infrastructure and radio units will be replaced during the project.

*Computer Data Network:* This network connects approximately 3,100 computer devices in approximately 85 locations. These computer devices include PC’s, terminals, printers, network servers, communications equipment (routers, hubs, and switches), modems, and LAN/mid-range/enterprise servers.

The enterprise network supports equipment and systems from multiple communications protocols. All supported network systems are based upon open standards, and compliance with published standards is required for any network-connected device or system. In order to connect varying computing environments together into a single enterprise network, routers are required to translate and route data across the network.

The Enterprise Server, as well as several mid-range servers, is the primary network resources. With the proliferation of servers and PC's, the network has expanded to support TCP/IP, the Internet protocol as the standard. A primary goal for the Enterprise Network is to support only protocols that are "routable". Routing is defined as the filtering and managing of data traffic across the network, which ensures that data arrives at its destination. Router equipment determines the correct and most efficient pathway for this routing.

The primary network architecture for workstations in the County has traditionally been token ring. The industry standard architecture has become Ethernet. All new County sites are currently being configured with Ethernet and existing sites are being converted to Ethernet, these network adapters are less expensive and provide greater potential throughput and bandwidth.

Network management is supported through various methods using Cisco and OpenView software. OIT will continue to look at network and open source solutions that help match our countywide access and resource application needs.

The enterprise network high-speed backbone utilizes a combination of ATM and 100megabit (MB) Ethernet over a hybrid of private fiber optic cable and commercial frame relay services.

The Anne Arundel 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 business. The interactive nature of the technology allows residents and others to conduct business with the County from the convenience of their home without the need to call or visit the County Government.

The County's high speed Internet architecture is comprised of the following:

- High-speed, open connection to the Internet
- Public access Web server
- Intranet Web server

***High-speed Connection to the Internet*** – The County maintains two 10-megabyte (MB) two-way service. This service provides citizen access to County Web services, such as Recreation & Parks, Tax & Utility Bill Payments, Animal Control and Employment Application Processing as well as providing Internet access for County staff. Due to growth and usage, a 3<sup>rd</sup> 10MB connection is presently being added.

***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 COUNTYWIDE as well as to the PUBLIC. . This could be viewed as an "on-line counter" where residents and other may obtain information related to services, recreation and so on.

***Intranet Web server*** – "CountyWeb" Intranet Web Server provides the same type of facilities but access is limited to County staff. In the future, some internal applications will also be located on the Intranet server. This is part of the architecture decision that can be better expanded for open source and access management for collaborative data sharing across county agencies.

Further study and transition plans should be done to continue the countywide agency network and functional access solutions.

*Physical Plant Equipment:* At the base of Anne Arundel County's information technology infrastructure is the wiring and commercial circuits that tie the various components together and permit the flow of data around the network. Asynchronous Transfer Mode (ATM) and Ethernet wiring with transmission rates up to 155 megabytes per second are primarily utilized.

In addition to the 27 miles of private fiber optic cable utilized, the County, through an agreement with Comcast, is currently installing and utilizing another 100 miles (approximately). The installation and engineering work for this project is in progress. 41 sites have recently been completed (combinations of County, Board of Education and AACCC locations), and the County has purchased the necessary electronics needed to incorporate these sites into its enterprise backbone network.

#### **4.5 Controls**

See Section 5 of this Plan for further discussion of this item.

## **SECTION 5.... MANAGEMENT CONTROLS AND PROCESSES**

*In any large, complex enterprise such as Anne Arundel County Maryland, virtually all Information Technology (IT) projects are supported directly or indirectly by wide range of business process and practices. Although such processes are often not visible, they are integral to both the development and delivery of flexible, cost-effective and reliable information technology solutions.*

*The purpose of this section of the plan is to demonstrate new or existing IT Management Controls and Processes in place to illustrate cost effective and efficient technology solutions.*

### **5.1 IT Planning Process**

During the last several years, the IT Planning Process has been refined with the adoption of lessons learned and the continual coordination and information exchange between Information Technology and the County business arena. During FY2001, a master technology plan was conducted with all County Departments. Several management and technology recommendations were made that would improve the business process and use of technology in the County. Due to financial restrictions in the County, the contents and recommendations of the master plan were prioritized and spread over several fiscal years.

A technology plan is not a one-time event. To be effective, it must be constantly analyzed to ensure the proper direction is aligned with the business goals of the County. The Office of Information Technology (OIT) is committed to annual technology plan updates. *OIT will work directly with the Administration and each Department to ensure the plan is meeting the requirements of the County business functions. The OIT systems and request form will initiate consideration for OIT improvements, and with recommendation will be given to the CAO for capital and budget committee review.*

The IT planning process will be used to facilitate the future direction of the County. To this end, the ongoing involvement of managers and key employees in producing plans provides solid results for the County as well as the individual departments. The planning process provides both a clear way to carry out a defined plan and a means for ensuring understanding and commitment to it. A well-defined and executed plan is necessary to our success as is our technical staff, financial resources, services and technology. As currently constituted, the process will incorporate both a top-down and bottom-up approach in which departments and OIT staff interact to identify initiatives and projects that support the OIT request guidelines as well as County Executive' and Chief Administrative Officer's approvals based on the County Executive's Goals. (Appendix 2 provides a sample form that will be used for all new projects) to Anne Arundel County citizens and taxpayers.

**Anne Arundel County, Maryland**  
*Office of Information Technology*

**FY10 Departmental Technology Planning (Requests)**

**Aging**

- Intelligent Transportation System for Aging Buses

**Central Services**

- EnterpriseOne Support

**Community Services:**

- Citizen Relationship Mgmt

**Court**

- Courtroom A/V Replacement

**Detention Centers**

- Inmate Management
- Inmate Monitoring via IVR

**DPW**

- WEB applications for AVL & Snow Removal - Highways

**Finance**

- MUNIS Storage Enhancements

**Fire Department**

- Inventory Management
- E911 Dispatch & Records

**Government Relations**

- Legislative Review Support

**Health Department**

- Complaint Tracking

**Information Technology**

- Network Upgrades & Server Replacements
- Telephone Systems Replacement & Modernization
- Document Mgmt

**Personnel**

- RFP for HR system replacement (Payroll, Records, Time & Attendance, Benefits, Training Mgmt, Succession Planning, Performance Mgmt, etc)
- Pension
- Printer replacements

**Police Department**

- E911 Dispatch & Records
- Server and storage equipment replacement

**Recreation & Parks Department**

- Inventory Management

**Sheriff**

- E911 Dispatch & Records, Civil Processing

**States Attorney**

- Case Mgmt Upgrades

**5.2 IT Project Request Guidelines**

In general, projects that have the best chance for approval and funding are those that significantly improve citizen access to essential services and information; cut across broad lines of business to improve efficiency and service delivery of multiple departments; offer quantifiable social or

Economic benefits well in excess of project costs, and enhance the County's overall IT infrastructure.

Priority 1 – These projects will fall into four (4) categories:

- *Mandated Enhancements* – these are improvements or alterations to existing applications, directed by the County Council via legislation, the State of Maryland directed by legislation or the Federal Government directed by legislation.
- *Public Accessibility* - these projects enhance the availability of Anne Arundel County Maryland information and services to our citizens. Examples include the Internet Home Page and Electronic Commerce.
- *Corporate and Strategic Initiatives* – these projects add demonstrable value to a broad sector of County Government or to the County as a whole. Examples include the OneWorld Financial System or Intranet applications.
- *Modernization Projects* – these are upgrades and enhancements to major County applications or infrastructure (including computer hardware or network equipment). Modernization projects also include network or server equipment upgrades.

Priority 2 – Priority 2 projects are generally narrower in scope than Priority 1 projects. They should offer significant enhancements to existing services or applications or in some way provide leverage to the County's broader strategic objectives.

Priority 3 – Priority 3 projects are departmental specific proposals with limited applicability to service improvements or to the County as a whole. Examples may include upgrades to a department Local Area Network File Server.

### **5.3 IT Project Management**

Managing large IT projects through to successful completion, one-time, and within budget, is extremely challenging, even for experienced professionals. Successful completion of such a project is dependent upon the assigned individuals possessing not only knowledge and understanding of the highly technical aspects of an IT project, but also the skills associated with project management in a rapidly changing environment. The importance of effective management of IT projects in the County has long been recognized.

Training of prospective or future project managers should be provided in the following areas:

- General project formulation and implementation
- Use of corporate information systems (financial, procurement) to support the project
- Procurement and contractor relationships
- Effective project communications
- Return on investment (ROI) analysis
- Use of project management software

Effective project management is the key to any successful IT project. With the County's increased focus in general, on providing training and certifications, this important discipline should be considered.

### **5.4 Management Process Improvement Highlights for FY2008**

In addition to the projects mentioned below, OIT will continue to support the identified life cycle replacement cycle plan for all County Technology (Appendix 3).

#### **5.4.1 Security Enhancements**

A professional grade Security Assessment is now completed for the County's Computer and Network Systems on a 1-2 year cycle. As a result of the effort, an internal OIT Security Committee was established, a security plan was completed and we continue supporting and fine-tuning SOP's. The release of Administrative Procedures for the County that support the Security OIT plan has become part of our normal business practice. These include the following:

- Security Plan Goals established
- Dedicated Security Resources put in place
- OIT Security Policies Security Administrative Procedures have been enhanced and made available on the County Intranet
- New & existing employee security awareness and training
- Security standards developed
- Enforcement of Security Policies in place
- Enhanced requirements for system access
- Annual "recertification" of all County users

#### **5.4.2 Telecommunications Master Plan**

Telecommunications has completed and is implementing the Public Safety Plan. The Business enterprise wide Telecommunications master plan will be developed and incorporated into the OIT County wide Technology Strategic Plan. It is already identified in the OIT life cycle plan for replacement needs starting in FY05. This critical “voice” communications piece will compliment the current and future technologies provided and produce a road map for the future.

#### **5.4.3 GIS Master Plan**

In FY2007, the enterprise wide GIS master plan was further fine tuned and included as part of the OIT County wide Technology Strategic Plan. This critical piece will compliment the current and future technologies provided and produce a road map for the future.

#### **5.4.4 P.E.G. Studio Governance and Operational Controls**

The current OIT developed studios operating / policy & procedures have been strengthened as a result of the new Studio. Professional resources (as well as the County Law Office) have assisted in the governance and operational controls. These policies and procedures are reviewed and updated based upon new contractual Cable Agreement Cycles and Agreement Governance.

#### **5.4.5 Expansion of Help Center (HC) Service Offerings.**

Enhancing the “One Point of Contact” concept - For FY2008 plans are being continued to expand HC service offerings to include support for all County hardware and software applications as well as online, WEB based employee training. An intuitive relational support database has been implemented to facilitate and standardize the provision of services offering callers repeatable and proven processes of problem resolution and corrective actions. Centralization of these support service offerings will give departmental staff a single point of contact for any problem and free technical staff from routine or less important service calls. Based upon the triple grown and expansion of requests of these services

#### **5.4.6 System Development Life Cycle**

Please see section 4.4 above for more details in this important area.

#### **5.4.7 Information Technology Policy and Procedures**

The Office of Information Technology is revising all associated policy and procedures and will publish revisions on our website.

## 5.5 Anne Arundel County IT Standards

### Desktop:

- Operating system                      Microsoft Windows XP Pro
- Hardware                                      Dell PC

### Mobile Data Computing (Personal Computers used primarily in County Vehicles):

- Hardware - Panasonic Toughbook Models CF29, CF73, or CF19
- Operating System - Windows XP Pro
- Wireless Service - Verizon Wireless BroadBand Access EVDO Rev 0/A (most current)
- Specialty Applications - must be approved by OIT if not listed below

### Productivity Applications:

- Word processor                              MS Word (WordPerfect where required)
- Spreadsheet                                      MS Excel
- Database    MS Access
- Presentation                                      MS PowerPoint
- Project Management                              MS Project
- Email Client                                      Novell GroupWise 7
- Internet WEB Browse                              MS Explorer
- Special Purpose                                      MS Visio

### Specialty Applications:

- Antivirus    Norton Antivirus
- 3270 Emulation                                      NS Elite/Hummingbird
- AS/400 Emulation                                      Client Access
- RS/6000 Emulation                                      Blue Vista & ICE/TCP Emulation
- GIS    ESRI ARC/GIS, MapOptix, County View
- Report Writer    Crystal, Web Focus, QMF

### Servers:

- Operating System                                      Microsoft Windows 2000/2003  
Novell Netware OES  
AIX V5  
OS/400 V5.4  
Z/OS V1.9
- Hardware    Hewlett Packard//Dell Intel Servers  
IBM iSeries, pSeries, zSeries
- Backup    Backup Exec & Net Backup  
AIX utilities  
OS/400 utilities  
OS/390 utilities
- AntiVirus    Norton Antivirus
- Security    Security - Microsoft Active Directory, Novell eDirectory
- E-Mail    GroupWise 7.0
- Databases    Business - DB2 : Geographic – Oracle,  
SQL Server, ESRI ARC database products
- Communications    Cisco (Hubs, Routers and Switches)
  
- Video DVS

- Enterprise class DVS, MPEG-4, capable of streaming video images from eight camera inputs (min.) at thirty (30) frames per second (60 NTSC fields per second) under all motion conditions.
- DVS Transmitter: support up to five (5) redundant archiving streams per video input, simultaneous recording of live video at selected frame rates and/or quality from the nDVR/nDVR Pro video management and storage software. The DVS shall comply with VSIP Open Technical Framework for video services over IP via Smartsight Networks, Inc. and fully compatible with nDVR and Loronix Video Manager (LVM). The DVS shall operate over the County Local Area Network (LAN) and Wide Area Network using standard 10/100/1000 Base T connection supporting DHCP and APIPA automatic IP configuration. The unit shall also support Telnet remote software.
- Video DVR
  - IP enabled Input type: Fixed, PTZ, low-light, standard NTSC or PAL signal. Video storage: digital video and audio with immediate playback and long term storage. Date/Time capture. Alarm event information. Continuous 24/7 operation with alarm and schedule recording, and on-demand recording. Video authentication. Automatic fall-over. Activity detection. Quadplex operation: simultaneous recording and display of live video. Dry contact operation. Virtual matrix support. Fall over and redundant support. Dual stream video.

Video Cameras

- Camera Cable: Plenum Siamese RG59 coaxial 18AWG/2. Solid copper center conductor with copper braid shield 95%+ coverage or fiber optic equivalent.
- Camera Units:
  - Input type: Fixed, PTZ, low-light, standard NTSC or PAL signal. Video storage: digital video and audio

## Appendix 4

### RETURN ON INVESTMENT/ LIFE CYCLE COST

Example Project: CIMS

1. CURRENT SYSTEM OR PROCESS COST
  
2. SYSTEM DESCRIPTION
  - ASSET MANAGEMENT SYSTEM FOR DEPARTMENT OF PUBLIC WORKS. WILL BE USED BY HIGHWAYS, WASTE MANAGEMENT AND UTILITIES. TWO HUNDRED TOTAL USERS.
  
3. SOFTWARE COST
  - ESTIMATE \$120,000
  - MODIFICATION TO STANDARD SOFTWARE PACKAGE \$25,000
  
4. HARDWARE COST
  - ESTIMATE \$80,500
  
5. OFFICE SPACE COST
  - COMPUTER ROOM, ESTIMATE \$40,000
  - SPACE FOR 3 PEOPLE \$6,000
  
6. FURNITURE COST
  - 3 DESKS \$ 3,000
  
7. TRAINING COST
  - ESTIMATE \$70,000 OVER LIFE OF SYSTEM.
  
8. SOFTWARE MAINTENANCE COST

- FIRST YEAR \$25,000
- INCREASE 5% EACH YEAR

9. HARDWARE MAINTENANCE COST

- FIRST YEAR \$18,000
- INCREASE 5% EACH YEAR

10. SUPPORT PERSONNEL COST

- 2 ADDITIONAL CLERK III POSITIONS
- 1 SYSTEM ADMINISTRATOR

11. SYSTEM LIFE

- TEN YEARS

12. FIRST YEAR

- FIRST YEAR / START UP COST \$499,000

13. TOTAL LIFE CYCLE COST

- \$2,114.000

