Maryland State Archives

Information Technology Master Plan
FY 2008 - FY 2012

August 31, 2006

Part I – General Agency Information

A. AGENCY NAME AND ACRONYM

Maryland State Archives (Archives)

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Plan approved on ___**August 31, 2006**____

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Part II – Agency Business Functions, Goals and Key Strategies

A. VISION STATEMENT

A state that preserves government records (as well as certain designated private records) and provides access to them in a convenient, cost-effective manner and in a web-enabled environment.

B. MISSION STATEMENT

The State Archives is the central depository for Maryland government records, and certain designated private records of permanent value. Holdings date from 1634 to the present. They include colonial and State executive, legislative and judicial records; county probate, land and court records; municipal records; and publications and reports of State, county and municipal government. Special collections preserve records of religious bodies (particularly as they relate to the recording of births, deaths, and marriages), fine and decorative arts, business and organizational records, maps, newspapers, photographs, and private papers including oral histories. Our central mission is to appraise, acquire, describe, preserve and make electronically available the permanent records of the past, while providing reliable current information about Maryland State, county and municipal government. Materials are made accessible through a secure and (where appropriate) web-enabled environment, continually compiled and updated for the benefit and use of Maryland citizens and public officials.

C. BUSINESS FUNCTIONS

The State Archives serves a diverse group of customers in its role of providing records deemed to have permanent historical, administrative, fiscal, legal, or educational value. Our customers include the courts, state agencies, General Assembly, lawyers, genealogists, title searchers, historians, educators, land researchers, county and municipal governments, federal government, art historians, general researchers and the public. In addition, the Archives provides service to the public seeking records crucial to their lives to document birth, death, marriage and divorce, property rights and judicial proceedings.

The Archives' interaction with its customers takes place in numerous forms from walk-up service to services provided over the Web. The Archives' major business functions are:

1.) **Digital Imaging and Acquisition**

The identification, management, and conservation of the permanently valuable records of Maryland State and local government is supervised by Imaging and Acquisition. This department provides digital-imaging, microfilming, photocopy and photographic support to all aspects of State Archives work. It also manages, coordinates, and promotes the preservation digital-imaging services offered by the State Archives in Annapolis and at its Ordnance Road and Baltimore facilities. In addition, this department provides logistical and technical support, and assists in the development of standards and techniques used in imaging projects. Its current, overarching mission is the identification, management, digital imaging, and quality control of all materials relating to the *mdlandrec.net* project.

Digital Imaging and Acquisition Services is made up of: Imaging Services, Geographical Services, Microfilm and CD Production, and Quality Control.

2.) **Records Appraisal and Description Services**

Appraisal and Description deals with the analysis and disposition of government records. The disposition of State, county and municipal records is determined by an appraisal of their value for future agency operations and historical studies.

Records Retention Schedules. Those records deemed to have permanent value are retained as archival documents. Their characteristics are described in records retention schedules. Other materials become disposable after a period of time.

Disposal Certificates. Those records no longer needed are scheduled for disposal as certified through disposal certificates.

All records retention schedules and disposal certificates must be submitted for approval by the State Archivist, and it is in the review of these schedules and certificates that the disposition of records is determined. Through this process, the important administrative, legal, fiscal and historical records of government are identified for permanent retention and eventual transfer to the State Archives. Other materials, when agencies no longer need them for current operations, can be destroyed.

3.) **Record Transfers and Space Management Services**

State, county and municipal government agencies in Maryland may offer the State Archives all files, documents, and records not in current use. Record Transfers and Space Management supervises the transfer, storage, and retrieval of those government records deemed to be permanently valuable.

State Government Records. The records of all State agencies, boards, and commissions that are abolished or that otherwise conclude their work must be transferred to the custody of the State Archives. By law, State agencies have their records placed on retention and disposal schedules. No public records can be destroyed without scheduling and the prior approval of the State Archives.

County and Municipal Government Records. All records that are in the courthouses of the State and that were created prior to April 28, 1788 (when Maryland ratified the U.S. Constitution) must be deposited at the State Archives. All current deeds, mortgages, and releases recorded in the courthouses of the State are microfilmed and preserved at the State Archives for security purposes. Limited facilities are available for the filming of records of State agencies. The State Archives also serves as the official depository for subdivision and condominium plats.

4.) **Reference Services**

Records are made accessible to the public and government agencies through the search room, by mail or telephone, and through electronic media. Open Wednesday through Friday, and three Saturdays a month, the search room is staffed by professional archivists to assist patrons. Electronic and mail reference services are available Monday through Friday. In addition, electronic services and information (including comprehensive catalogues of the Archives' holdings) are accessible through the State Archives' homepage on the web.

Records are used for legal documentation, historical research, land title searches, geographical information, vital record research, and genealogy. The Archives offers limited research services by its staff. Copies of records can be produced (for a fee) on paper as photographs, or as digital image files. Self-service copying from microfilm also is available for many records.

5.) **Government Information Services**

Organized in 1986, Government Information Services assists the citizens of Maryland and their agencies of government with current information, continuously updated. This office is responsible for the *Maryland Manual;* the *Maryland Manual On-Line* government information available from the website of the State Archives; Government Publications; and the Library.

6.) **Information Systems Management & Electronic Archives**

Information Systems Management (ISM) began in 1989 as Computer Services and reorganized under its current name in 1997. This office oversees Electronic Archives, Information Technology Development, and Information Technology Support for the State Archives. The office also assists other State agencies in with Information Technology solutions concerning web sites, DNS, email, and web hosting. ISM supplies outsource support to the Maryland Courts public access workstations.

ELECTRONIC ARCHIVES: At its September 1998 meeting, the Hall of Records Commission resolved that a program of Electronic Archives be created within the State Archives. The program coordinates and manages the development of a permanent archives of electronic records. *Mdlandrec.net* and *plats.net* are two major initiatives of the Electronic Archives.

7.) **Research & Student Outreach Services**

Using original documentary sources, Research and Student Outreach works to interpret, preserve, and improve access to Maryland history. The foundation of this department is collective biography developed to document the lives and careers of individuals who have shaped the history of Maryland. The primary focus is on biographies of the men and women who have served in Maryland State government. In addition to State government officials, biographical research broadens to cover special topic areas highlighting significant contributions from federal, county and local government officials, Maryland women, African Americans, Native Americans, military personnel, teachers, doctors, artists, lawyers, and others. To reach the widest possible audience, the staff prepares all research results for publication on the Archives' website and produces print media as needed.

Research Services is also responsible for the management and placement of materials on the *Archives of Maryland Online* (http://aomol.net) web site.

Additionally, each summer, internships are offered for college students to learn archival and historical methods at the State Archives. Work/study programs also are available and managed through Student Outreach Services.

8.) **Artistic Property, Preservation and Public Outreach**

The State-owned art collections, traveling exhibits that tour Maryland, and exhibits in the Annapolis government complex are managed by Artistic Property, Preservation, and Public Outreach. The office also supports the work of the Government House Trust, and the State House Trust. This includes management of all requests for use of the State House, and serving as liaison with the Department of General Services and the Maryland Historical Trust for maintenance and preservation of the State House, the most historically important building in Maryland. Artistic Property, Preservation, and Public Outreach also provides support for certain activities of the General Assembly.

Special Collections Services

The State Archives is authorized to collect public and private records and other information relating to the history of the Province and State of Maryland from the earliest times. At the discretion of the State Archivist, the State Archives also is authorized to acquire collections of private records as permanent gifts (Code State Government Article, sec. 9-1010). With the exception of collections of fine arts, the Director, in conjunction with the State Archivist, reviews offers of materials as gifts to Special Collections. Offers of gifts of fine arts are reviewed by the Curator of Artistic Property and the State Archivist. Materials are accepted on the basis of their relevance to the holdings of the State Archives, their condition, and the need to provide for their proper storage and care.

D. Archives' Goals and Objectives

ARCHIVES' GOALS	OBJECTIVES
Goal 1. Identify, appraise, acquire, describe, and preserve records deemed to have permanent historical, administrative, fiscal, legal or educational value. Where appropriate, make these materials electronically available.	**Objective 1.1** Accommodate all permanent records transferred to the Archives through fiscal year 2008**.** **Objective 1.2** Through Fiscal years 2007 and 2008 monitor and assess requirements for the permanent storage of electronic records that are legally mandated to be transferred to or backed up by the Archives and provide the information technology infrastructure to accomplish this objective.
Goal 2. Make accessible records of permanent value. Where appropriate and possible, make those records available electronically.	**Objective 2.1** By fiscal year 2008, increase data transferred via the Web by a factor of 10 over fiscal year 2004 actuals.
Goal 3. Facilitate a broad and better understanding of State government and the archival record through the *Maryland Manual*, educational programs and published historical works.	**Objective 3.1** In Fiscal Year 2008, continue to describe the agencies, budgets, functions, historical evolution, organizational structure, origin, personnel, reports (mandated), and other aspects of State, county and municipal government in the *Maryland Manual On-Line*. **Objective 3.2** In Fiscal Year 2008, add value to the understanding of the archival record by interpreting records and making the results accessible through electronically published historical compilations and analyses, and research on the Underground Railroad in Maryland (http://mdslavery.net).
ARTISTIC PROPERTY – GOALS	**OBJECTIVES**
Goal 1. Inventory, catalogue, insure, and preserve State-owned art collections	**Objective 1.1** Inventory and catalog 100% of State-owned art collections on an annual basis. **Objective 1.2** By the close of Fiscal Year 2009, conserve 100% of State-owned art from the Annapolis Collection classified as being in poor or fair condition (per 2000 condition survey) in order to preserve the State's investment in the collections and increase the number of works available for exhibition. By the close of Fiscal Year 2010, conserve 100% of State-owned art from the Peabody Collection classified as being in poor or fair condition (per 2001 condition survey) in order to preserve the State's investment in the collection and increase the number of works available for exhibition.
Goal 2. Provide public access to State-owned art collections	**Objective 2.1** By June 2008, increase the number of items in Annapolis and Peabody Collections on display to the public **Objective 2.2** By June 2008, increase the number of online catalogue pages for the State-owned art collections available on the Internet by 10% in order to increase public awareness of the collections.
Goal 3. Support work of the State House Trust and the Government House Trust and conduct research on the history of the State House and Government House. In Fiscal Year 2008, have all records and images relating to the history of the State House in a web-enabled environment in support of the Historic Structure Report.	**Objective 3.1** Maintain records relating to the State House and Government House

Part III - Archives' IT Strategic Direction

1) Summary of Current Archives' IT Environment

a. Background.

During Fiscal Year 2006, the Archives' mission performance and technology architecture supporting the Agency core business activities continues to be highly affected by the *mdlandrec.net* initiative. Our budget is almost wholly supported by Special Funds generated by the agreement between the Archives and the Judiciary to put land records on line. IT hired or replaced one programmer and two database administrators, normal staff turnover. Additionally, IT hired one more database administrator and two network specialists to keep up with the demands placed on ISM by *mdlandrec.net*. The major portion of the seamless uploading of the Judiciary Information Systems (JIS) index data and the movement of land record images from vendors and the scanning workstations to the servers and ultimately to the public access workstations in the courthouses is rapidly approaching completion. However, the continuing demands of this initiative will continue to impact on the daily operation of the Information Systems Management division of the Archives for many years.

This initiative fully supports the Archives' mission to appraise, acquire, describe, preserve and make electronically available the permanent records of the past. Electronic records are accessible through a secure web-enabled environment, continually compiled and updated for the benefit of Maryland citizens and public officials.

The Archives' Chief Information Officer (CIO) is responsible for the direction and administration for Electronic Archives, IT Development, and IT Support.

Electronic Archives - The Electronic Archives' program coordinates and manages the development of a permanent archive of electronic records and is responsible for mass data storage management, database management, and multiple-platform network. Electronic storage is vital to the preservation of permanent records.

IT Development – Provides programming and database support for major web-based applications that provide significant financial income for the Archives; for the creation of a SQL Server interface for the tables that provide intellectual control over the Archives' holdings of government records; for the conversion to Microsoft Access of the few remaining dBase databases used by MSA staff on a regular basis.

IT Support – The IT Support staff provides the necessary infrastructure (LAN and WAN resources) for the attainment of the Archives' mission and goals. IT Support develops and administers policies, standards, and planning processes to support the management and procurement of IT systems, services, and equipment. In addition, IT Support develops, maintains and operates Archives' and Annapolis Campus Network IT application systems, as well as providing field operations for two off site warehouses and *plats.net* and *mdlandrec.net* applications on public access workstations in the courthouses.

b. Drivers and Issues

The Archives has, over the last 10 years, become increasing more efficient and innovative in the delivery of services to the citizens of the State electronically. Technology has played a vital role in the effective delivery of Archives' services to a worldwide audience of clients. The key business drivers that influenced the direction the Archives has taken are two of the pillars of the Ehrlich administration: Fiscal Responsibility and Commerce. In keeping with the State's IT goals, the Archives has a) adapted technology that improves the quality of service to citizens, b) collaboratively consolidated existing technology and information to increase the efficiently of agency operations, and c) implemented appropriate security systems and procedures to protect the States assets.

The move to automated systems at all levels of government presents this and all archives with enormous challenges and exciting opportunities. The challenges are to find the resources to store and make accessible the huge volume of electronic records created by government each day. If this can be done, then basic services and records that relate to the lives of every citizen, and the interaction between Maryland citizens and their government, will be available at the click of a mouse. To meet these challenges and take advantage of the opportunities, the primary objective of the Archives has been to create and maintain a truly viable and permanent electronic archives.

The electronic archives began with the initiation of a program, in conjunction with the Judiciary, called *plats.net.* This partnership was such a success that the Archives again partnered with the Judiciary in Fiscal Year 2004 to put land records online. This on-going project *(mdlandrec.net)* is a collaborative venture of the Maryland Judiciary and the Maryland State Archives that is integrating indices with existing land record systems to allow for the efficient electronic retrieval of land record indexes and documents online.

Mdlandrec.net provides a means to safeguard, preserve and make accessible those records that the Courts have identified as in danger of being lost forever. Additionally, *mdlandrec.net* helps to secure the State's significant investment in digital imaging of land records by providing a means of migrating older ELROI images to a cost effective, archival environment. *Mdlandrec.net* is providing web access to land record filings from Maryland's circuit courts, prospective as well as historic. Both these initiatives collaboratively consolidated existing technology and information to increase the efficiently of agency operations, both the Judiciary and the Archives.

The Archives has, with a measure of success, been able to fund essential archival services through revenue producing Special Fund projects like *plats.net* and *mdlandrec.net*. Too effectively deal with the tidal wave of records, both electronic and paper, special fund income should be captured for record management at the time the record is created.

Recent threats to the Archives' infrastructure include computer viruses, worms, spam and spyware. Security is continually an important issue. IT Support updates firewalls, web servers and email servers with patches and software upgrades on a regular basis. As technology advances and hackers become more proficient and spam and spyware becomes more prevalent, IT staff will need continuing education to keep up with the latest techniques to thwart attacks.

Currently, the Archives has about 94 terabytes of storage capacity, providing for web services as well as redundancy for important, ongoing electronic digital imaging projects like *mdlandrec.net*. These storage devices are critical to the maintenance of the data used *in mdlandrec.net* and *plats.net* as well as the *Archives of Maryland Online*. Recent events have shown that disaster can strike at any time and the IT management is concerned about the ability to recover from an emergency affecting either the access to the storage arrays or the storage arrays themselves. Off-site mirroring for storage arrays is critical to maintaining an uninterrupted connection with the courts. The Archives is evaluating and in the fact finding mode for a good disaster recovery plan to identify those processes and resources that are truly critical, developing realistic recovery objectives for them, and then developing a plan that can achieve those objectives as simply and cost-effectively as possible. DBM-OIT and a host of other Disaster Recovery vendors are suggesting solutions to the need for a consolidated and enhanced disaster recovery site for critical applications to provide quick response and prioritization of service restoration in the case of a disaster. By the end of this Fiscal Year (2007), the Archives would like to have an off premises mirrored archival storage site with 117,800 gigabytes of replicated storage space as well as duplication of all database and application servers, to comply with Disaster Recovery guidelines and to ensure that *mdlandrec.net* and *plats.net* are always online.

c. IT Accomplishments

The Archives provides 24 x 7 Internet access, e-mail service, intrusion prevention and firewall security to the Annapolis Campus Network of state agencies which includes the Comptroller, Department of Budget & Management, and the State Board of Elections. This gateway for the exchange of government information requires the Archives to maintain telecommunications, routing, firewall applications, intrusion prevention systems, DNS services for over 200 domains, web servers, mail servers, and support for network administrators and webmasters at a number of agencies.

There are approximately 158,938,394 html and image files on the Archives' web sites, a 73% increase over the Fiscal Year 2005 totals. Most of this Fiscal Year 2006 increase is due to the mdlandrec.net scanning initiative. Less than 2% are textual materials, such as the *Maryland Manual Online*, biographical research, educational materials, transcriptions, and finding aids derived from database inventories. The remaining files are images of land records and indices for *mdlandrec.net*, volumes on the *Archives of Maryland Online* website at *aomol.net* and plats available on *plats.net* and other miscellaneous image files.

The Archives has added electronic storage capacity at the following rate of 4,300 gigabytes for Fiscal Year 2003, 23,700 gigabytes in Fiscal Year 2004, 28,800 gigabytes in Fiscal Year 2005 and 37,900 gigabytes in Fiscal Year 2006 - for a total of 94,700 gigabytes of electronic storage - in order to keep up with the demand placed on the system by the millions of images generated by the *mdlandrec.net* initiative. We estimate that in Fiscal Year 2008 we will need an additional 35,340 gigabytes of electronic storage, just to keep the ratio between electronic record storage capacity and electronic data managed around the optimum 60%.

The Archives began tracking the amount of data transferred to customers online in Fiscal Year 2001. There was an 87% increase in data transferred from Fiscal Year 2001 to Fiscal Year 2002. The percent of data transferred in Fiscal Year 2003 to Fiscal Year 2004 flattened to 64% with the completion of *plats.net* project. However, with the advent of *mdlandrec.net* the data transferred increased 99% between Fiscal Year 2004 and Fiscal Year 2005 and 130% between Fiscal Year 2005 and Fiscal Year 2006. This huge increase in the amount of data transferred has specifically impacted IT network management. The network team has set up load balancing on the mdlandrec.net servers to cope with the huge increase in demand during normal working hours (specifically when the courts are open to the public for access to *mdlandrec.net*). In addition, the Archives has updated the WAN and integrated it into NetworkMaryland™ to provide increased bandwidth for access to *mdlandrec.net*. When this service goes public, the demand on our resources will increase exponentially and the service will need to be monitored 24/7.

Database Administration In Fiscal Year 2006, the Archives' archival record series data was managed by three database administrators in over 51,495 tables containing over 6 billion records of data. This was a 104% increase in tables and a 789% increase in data records from Fiscal Year 2005. This impressive increase in data was primarily due to the MdLandRec.net initiative. Over the last Fiscal Year, the database structure for MDLandRec has been rewritten to give much better performance, stability and flexibility. The nightly data synchronization between MDLandRec and the Judicial Information Systems' mainframe database was rewritten to take advantage of superior downloading techniques and new technologies that were developed in collaboration with the JIS staff. This included major upgrades in software and hardware at both the Archives and JIS. MDLandRec was also enhanced so that a database export could be performed for third parties on a subscription basis. This feature was requested by the Judiciary.

The Underground Railroad Project that has been investigating Maryland's role in slavery and the freeing of slaves received a major conversion of Access databases that are now in a SQL Server format and usable by the web interface that was developed by the programming staff. A unique project that required not only the design and development of databases, but the web interface programming as well was the Department of Public Works Pilot Project that allows civil engineers to view their engineering plats from any location, saving time and money for the residents of Maryland. Last, but by no means least, is the design and ongoing support for the Governor's Office Photo Gallery website that allows Marylanders to print out photographs free of charge on their own printers instead of the delay and cost of ordering pictures from the Governor.

Computer room An additional air-conditioning unit was acquired for Computer Room 2 and a back up generator to support both computer rooms was put in place in the last Fiscal Year. The second air-conditioning unit and the generator targeted for maintaining an uninterrupted power supply to all the servers and storage arrays housed in the Archives' computer rooms are critical components for basic contingency planning.

Field Operations The IT Support Staff not only supports the hardware and software on the over 200 staff workstations in the Archives and its two Anne Arundel County warehouses, but also that equipment in the public access areas of the County Circuit Courts used for *plats.net* and *mdlandrec.net*. In Fiscal Year 2006, the number of plats.net workstations remained consistent at 64, but the number of mdlandrec.net workstations increased 85% from 130 in Fiscal Year 2005 to 240 in Fiscal Year 2006. With the expansive addition of mdlandrec hardware and software in the Courts, the Archives' IT Support staff hired two additional network specialists to provide installation, maintenance and support services to the those public access workstations. The IT Support field technicians spent 843 hours on service calls (including travel time) to the courts in Fiscal Year 2006, a 263% increase over Fiscal Year 2005. The Support staff utilizes the BridgeTrak Web, Issue Management System (help desk software) to keep track of service calls.

Support of Business functions. The Archives IT Staff provides efficient, effective and quality service in support of the Archives' business plan. IT staff are always seeking innovative ways of providing solutions for electronic access to the collections housed at the Archives. Measures of success point to the large quantities of records received and made accessible, the usefulness of information about the government that created the records it receives, and how effectively patrons are able to use the records. During Fiscal Year 2006, the Archives successfully requested bids for a new Cat 6 LAN and 10 gigabytes of fiber backbone for the Archives main building. This work was begun at the very end of Fiscal Year 2006 and will be completed in the first quarter of Fiscal Year 2007. This updated backbone and intranet will allow staff to do their work more efficiently and effectively, thus providing further access to the record holdings.

Access to Archives' services is provided through the following web sites programmed and maintained by IT staff.

- **Mdlandrec.net**   Mdlandrec.net is the Maryland State Archives management program for digitizing and displaying archival copies of Maryland land records. During the initial creation and rollout of the first version of the website, IT staff provided significant VBA and ColdFusion programming support for mdlandrec.net by upgrading and expanding Visual Basic programs and modifying the existing ColdFusion web application. During the past fiscal year, programming staff examined existing QA/QC procedures and provided additional programming to expedite the processing and cataloging of land record images. In addition, the website has been modified as needed taking into consideration suggestions from court clerks, their staff, and the user community.

- **Mdgovpics.net** In November 2004, Archives' staff designed and developed a website (http://mdgovpics.net) for the Governor's Press Office showcasing photographs taken at events around the state of Maryland. The mdgovpics.net allows the general public to quickly download photographs taken at a particular event. This has resulted in a savings for the Governor's Press Office since staff photographers no longer need to print photographs requested by the public, allowing the photographers to spend more time on location and less time in the darkroom fulfilling photo requests. By the end of FY 2006, the number of images transferred to Maryland State Archives was 184,510 photographs from around the state.

- **Google search engine** The Archives purchased a Google Search Appliance in Fiscal Year 2005 and after a delayed delivery, got it up and running by January 2006. Located at http://query.mdsa.net, the new Archives' search engine has indexed about 3 million pages of our web site and is adding new pages as they are placed online. This search engine has definitely improved the access to our web site and therefore the quality of services to our citizens - the speed is incredible - 32,000 links are returned in 0.3 seconds.

- **Mdslavery.net** *Beneath the Underground: The Flight to Freedom and Antebellum Communities in Maryland*. This website, designed and supported by IT and Legacy of Slavery Department staff, provides insight into the story of slave flight, and how the geography, laws, and communities of Maryland as a slave state aided or hindered escape. The site is expanded continually through the stewardship of a webmaster hired specifically for the project. In Fiscal Year 2006, the IT Development team worked with department members to provide patrons with a web accessible, searchable database that offers access to nearly 100,000 references to names, figures, locations, etc. of slavery related information taken from U.S. census records, newspapers and county court records. Additional accounts of Maryland's African American history and sources for further research are displayed on *Study of the Legacy of Slavery* website linked off the Archives' homepage at http://mdsa.net.

- **Teachingamericanhistorymd.net** The *Archives of Maryland Online* series *Teaching American History in Maryland: Documents for the Classroom* is researched and developed by Archives' IT staff and graduate students in the public history program at the University of Maryland Baltimore County (UMBC). Documents for the Classroom makes facsimiles of original documents available for use by teachers and students in elementary and secondary schools, as well as colleges and universities. The document packets have also been used to enhance the teaching of children who are home-schooled. The Teaching American History in Maryland program is a joint partnership between the University of Maryland Baltimore County Center for History Education (CHE), the National Council for History Education, the Baltimore County Public School System, the Baltimore City Public School System, the Maryland State Archives, the National Archives, the B & O Railroad

Museum, the Enoch Pratt Free Library, and National History Day. It is funded by grants from the U.S. Department of Education and the Maryland State Archives.

In the past year, Archives' staff also made presentations at spring workshops for Anne Arundel County teachers and summer seminars at UMBC for Baltimore City and Anne Arundel County teachers. IT Staff have provided additional mentoring as needed to help teachers locate and access primary source materials appropriate to their teaching needs. New primary source materials, including photographs and newspapers, were scanned and added to the website. In addition, the Teaching American History in Maryland website (http://teachingamericanhistorymd.net) was redesigned to provide more efficient access to the document packets.

- **Plats.net** The development of the *Digital Image Reference System for Land Survey, Subdivision, and Condominium Plats* for the Administrative Office of the Courts has resulted in online access to over a million images of plats for 23 counties and Baltimore City. Continuing response to *plats.net* has been very positive. This program not only serves the interest of the courts and the Archives, but is a model for what the Archives wants to do with other record series in high demand. Both were offered and accepted by the Judiciary as dynamic serial publications of the *Archives of Maryland On Line* (*http://aomol.net*) in a joint effort of the executive and judicial branches of Maryland State Government to improve the delivery and access to Maryland land records. Images of plats and survey materials, current and historic, are continually and routinely added to the *plats.net* web.

  The *plats.net* application is maintained and supported by the IT staff, database administrators, programmers and support staff, both at the Archives and on site in the Circuit Courts on the public access workstations.

- **Archives of Maryland Online** The Maryland State Archives publication series, *Archives of Maryland Online*, currently provides access to over 521,000 pages of historical documents that form the constitutional, legal, legislative, judicial, and administrative basis of Maryland's government. Online access to this information at the Archives' web site enables users to research quickly and easily such topics as Maryland's constitutions and constitutional conventions' proceedings, session laws, proceedings of the General Assembly, governors' papers, and military records. Through this project, the Archives is making accessible in electronic form, and preserving for future generations, records that are scattered among a number of repositories and that often exist only on rapidly disintegrating paper.

  During Fiscal Year 2006, the *Archives of Maryland Online* placed over 50,000 pages of material on the web related to Maryland history. The main priority was to post images of the Laws of Maryland from 1963 to the end of the twentieth century. Work also focused on making available the Proceedings of the House of Delegates for the nineteenth century. All of these sources are placed online initially as images, and fully searchable text is added later as time and resources allow. Various other works of historic interest were also made available, such as eighteenth century newspapers detailing the Revolutionary War in Maryland and the building of the new nation. Staff will pursue these same goals in Fiscal Year 2007, in an effort to continue providing worldwide electronic access to records which help form the constitutional, legal, legislative, judicial, and administrative basis of Maryland's government. The Archives formed a public-private partnership with the Maryland State Questers and the Kitty Knight Questers, Chapter 1031. Through a grant, they paid for the conservation, scanning, and transcription of early Kent County, Maryland, court records the results of which have been posted online. The Questers have applied for a similar grant for Fiscal Year 2007 to benefit the Archives.

- **The Archives' web sites** The Archives placed an Internet site in operation in late February 1995, www.mdarchives.state.md.us (mdsa.net). That site, in addition to *mdlandrec.net*, *plats.net*, *msaref.net*, *ecpclio.net, mdag.net, aomol.net* and *mdstatehouse.net* now contain over 158 million files available to the public (up from 91 million in Fiscal Year 2005) relating to every aspect of the Archives' operations, reference resources, and the *Archives of Maryland Online* project. Last year the Archives received over 157 million requests for data on our web site, a 48% increase over the 106 million requests in Fiscal Year 2005. This approach to automating archival records allows the wide use and appreciation of archival material and greatly enhances public access to documents without damage to original records. The online world is the future of the Archives' reference services program that, until very recently, was based primarily in our public search room

and mail answering system. These initiatives represent a significant achievement to ensuring long-term access to important records.

- *Maryland Manual On-Line*   The Archives assists Maryland citizens and public officials with current and historical information about government through the *Maryland Manual On-Line* (mdmanual.net) and the *Maryland Manual* (book & cd editions). The *Maryland Manual On-Line,* a continuously updated guide to Maryland government, has been accessible on the Internet since December 1996. It presents an overview of the organizational structure and staffing of the executive, legislative and judicial branches of Maryland government. It shows agency budgets and organizational charts, lists mandated reports, and provides the origin, historical evolution, and functions of government agencies. As the reliability of the *Maryland Manual On-Line* is recognized, its use as a source of government information increases.

- *Who Are Your Elected Officials?*   Would you like to know who represents you in the Maryland General Assembly and in Congress? All you need to know is your street address of your residence to use the look up form to find your elected officials. The mdelect.net and mdmanual.net sites mesh well to provide customers with data on their elected officials in a timely and cost effective manner. Web site requests jumped 38% in Fiscal Year 2006, from 3,985,658 to 5,503,908 and the amount of data transferred rose from 34.8 gigabytes to 47.9 gigabytes.

d. IT Goals and Strategies

IT Goals	Objectives
Ensure the Archives' information technology infrastructure and core business systems managed by the IT Staff are efficient and effective	- Annually, there are less than 2 substantial disruptions of LAN service within operating hours for management systems that support Archives' processes and projects - Annually, there are less than 2 substantial disruptions of web service and related database services within normal operating hours - Annually, there are less than 2 substantial disruptions of email service for the Archives' staff
Ensure the WAN infrastructure as it pertains to the Archives' staff and clients	- Annually, there are less than 2 substantial disruptions of web service for those agencies with web servers housed at the Archives - Annually, there are no substantial disruptions of name server service for those agencies whose DNS is hosted by the Archives - Annually, there are less than 2 substantial disruptions of firewall service for those agencies that rely on the Archives' firewalls. - Annually, 98% of customer queries/problems are resolved in 12 or fewer hours
Address the information technology requirements for the permanent storage of electronic records	- Annually, there are less than 2 substantial disruptions of the flow of electronic data from the storage array housing electronic records - Increase Archives' electronic storage capacity as necessary to accommodate the electronic data that will be acquired in Fiscal Years 2007 and 2008 - Install Storage Area Network and upgrade LAN backbone to 1 Gigabit network to accommodate the electronic data that will be acquired during the plan period of Fiscal Years 2007 and 2008.

Performance Measures	2005 Actual	2006 Actual	2007 Estimated	2008 Estimated
Inputs:				
Electronic record storage capacity (gigabytes)	56,800	94,700	117,800	153,140
Outputs:				
Electronic data managed (gigabytes)	38,000	65,000	102,000	105,165
Website files online (images, htmls, etc.)	91,632,605	158,938,394	200,030,031	233,217,050
Database records managed (millions)	696,355	6,191,225	8,466,871	10,466,871
Outcomes:				
Data transferred via web (in gigabytes)	3,510	10,834	33,477	66,954
Website requests (hits on server)	106,829,999	156,798,582	230,493,916	338,826,056
Efficiency: Ratio of electronic data online to storage capacity	67%	69%	87%	69%

e. Agency Support of the State IT Master Plan

1) Maryland Technology Architecture Framework (MTAF)

The Archives attended the MTAF seminar and participated in the MTAF IT inventory survey in February 2005 (Fiscal Year 2006). The IT team met with a MTAF representative to review how the survey should be filled out and see how some MTAF recommendations should be incorporated in the Archives' IT architecture. A copy of our response to the survey is available upon request.

The Archives is waiting upon the final results and conclusions of this inventory of the current IT infrastructure which was conducted across the State. Once the long-range target enterprise architecture and initial standards are announced by DBM's OIT, the Archives will work out the feasibility of a course of implementation and an estimate of the costs that would be incurred.

2) IT Project Management

N/A

3) IT Disaster Recovery and Security Program

In Fiscal Year 2006, a backup generator and air conditioning unit were installed for the main computer room. There are now two air-conditioning units providing service to that room.

The backup generator was installed during the summer of 2005 and went online at the beginning of September. This generator keeps all services, including air-conditioning, in both computer rooms running in the event of a power failure. The failover works in conjunction with the APC Enterprise Infrastructure power backup system which is monitored by Archives IT staff and APC 24/7. The APC picks up immediately upon any power outage and will work for 20 minutes. The backup generator kicks in 30 seconds after power failure and takes over from the APC system. The diesel powered generator will run for 48 hours at full load. Since the Archives is only utilizing about 60% of the generator's capacity, it is assumed it will run longer than 48 hours on a single tank of fuel. Fuel is checked and topped off after maintenance contracted quarterly tests.

Computer room access is restricted by the addition of keypads and the regular rotation of the entry code. Consultants working in either computer room are given short term access codes which expire concurrently with the end of their contract. There are also sign in sheets in both computer rooms and contractors are required to sign in and out on a daily basis. Contractors without DGS badges are escorted at all times by IT personnel.

MARS and IDS The Archives faces the same IT security challenges that face all other state, federal, and county government agencies. Sophisticated Internet attacks are growing exponentially everyday, and basic perimeter defense must be addressed and more in-depth countermeasures must be deployed throughout the Archives' internal network.

The Archives has purchased and deployed a Monitoring, Analysis, and Response System (MARS) appliance and an Intrusion Detection System (IDS) module from Cisco systems to help personnel effectively identify, manage, and counter security threats for fiscal year 2007. Cisco's MARS and IDS uses a policy-based security approach to blocking security attacks, so the Archives' business and security policies must be incorporated into this solution. With the increased complexity of security threats, such as malicious Internet worms, denial of service (DoS) attacks, and e-business application attacks, achieving efficient network intrusion security is critical to maintaining a high level of protection. When combined, the MARS and IDS strategies provide a comprehensive solution. Fiscal year 2008 will integrate another level of MARS security with new updated features rich desktop analyze.

A Netbackup tape backup system was installed during Fiscal Year 2005 so the Network Specialists can backup all the internal servers as well as servers in the DMZ and clients web servers. This is the first time the Archives has had the capability to do this extensive backup of servers and storage arrays. All servers are backed up every night incrementally (new or changed files). All servers are fully backup up the last weekend of every month except the host for the Hitachi Storage array, which is backed up fully the second to last weekend of every month. All the tapes are inventoried and stored off site in a climate controlled area.

The Archives IT team has a partial Disaster Recovery Plan and the plan is not yet practicable in its entirety due to lack of off-site facility.

4) **Build Out and Migration to NetworkMaryland^{TM}**

The Archives migrated to NetworkMaryland^{TM} in Fiscal Year 2006, using 10 Mbps for Internet and 10 Mbps for SwGI. The 10 Mbps Internet connection has already reached maximum bandwidth and the Archives is upgrading to a 20 mbps line in Fiscal Year 2007. The Archives will continue to keep at least one connection to another ISP even after the migration is complete for backup purposes, since there is only one physical connection to NetworkMaryland^{TM}. With the build out of *mdlandrec.net*, the Archives must have backup in case of an emergency.

5) **IT Infrastructure -** N/A

6) **Consolidation and Standardization of Agency Web Sites**

The Maryland State Archives' web site at http://mdsa.net complies with the Branding Guidelines for State Government Web Sites issued by the Governor's Office in July 2004 and was online by the end of January 2005. Additionally, the Archives' webmaster has re-designed and branded the web sites of the Board of Contract Appeals and Department of Veterans Affairs (both sites currently hosted on the Archives server) to help them comply with the State directive. The Archives provided consultative services to the Maryland Teachers & State Employees Supplemental Retirement Plans (MSRP) for the branding of their web site, also hosted on the Archives' web server. All these sites were compliant by the end of Fiscal Year 2005.

2) Agency Certification of Compliance with State Nonvisual Access Regulations

The Maryland State Archives has adopted the Statewide policy on Nonvisual Access.

3) Future Archives' IT Environment

Over the next few years, MSA IT will focus on the following projects and services

- Better database driven search engines to index and locate records

- Archival storage for security backup of government records, as well as for converted and electronic records
- Remote back up/disaster recovery site for electronic storage, database and web site services
- Efficient and more cost effective delivery of records and of important interpretive and analytical work
- Re-engineer and implement more secure network services for the Archives' main offices and remote locations
- Implement network and data access security controls

Maryland government and the public it serves will benefit from the Archives' ability to:

- Implement an efficient, automated management system for the circulation of archival records in the public search room
- Facilitate moving records of permanent value from state agencies into an archival, electronic environment
- Move paper, microform and other legacy formats of current collections into an electronic environment
- Provide continued, expanded web accessibility to the archival record