20 YEARS

Center for
Technology in Government

State Government Digital Preservation Profiles

North Carolina LARM

July 2006

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Introduction

The state government digital preservation profiles available on this Web page are based on information collected from those state and territorial library, archives, and records management units that completed CTG's State Government Digital Information Preservation Survey. CTG administered the survey to all state and several territorial librarians, archivists, and records managers in early 2006. See baseline report for details.

The profiles are organized by state or territory and the library (**L**), archives (**A**), and records management (**RM**) units that were represented in the survey response. (For example, "**Alabama ARM**," which is the first responding unit in the drop down menu below, refers to the **a**rchives and **r**ecords **m**anagement units from Alabama in one survey response.) For some states, respondents also included agencies other than library, archives, and records management. These profiles are marked with an asterisk (*) and the other units that contributed to the survey response are specified in the profiles.

To select a different profile, click on the Introduction/Select Profile link located on the top left of the screen.

You can also view consolidated tables showing how all the state/territory responding units replied to selected questions in the survey. (This is also found in Appendix E of Preserving State Government Digital Information: A Baseline Report.)
STATE PROFILES CONTACT
G. Brian Burke, Project Manager
Center for Technology in Government
University at Albany, SUNY

Section 1. Responding Unit(s)

Name of state or territory.
North Carolina

Name and affiliation of individual(s) who responded on behalf of the state or territory.
Jan Reagan - State Library/State Documents

Kristin Martin - State Library/Digital Documents

Druscie Simpson - State Archives/IT-Digital

Kelly Eubank - State Archives/Records Division

Kimberly Gibney - Administrative Office of the Courts

This profile includes information provided by the following units for this state:
- Library
- Archives
- Records Management

Section 2.1a. Setting Standards for EXECUTIVE Agencies

The following units have authority for setting standards, specified below, for digital information created or maintained by EXECUTIVE agencies. Multiple boxes are checked to reflect authority that is shared or delegated.

	Authority not assigned	Library has authority	Archives has authority	Records Management has authority	Others (See below)
Setting data management standards and or guidelines for information creation (e.g., metadata, file formats).			X	X	X
Setting information technology standards and or guidelines for information creation (e.g., state approved software applications).					X
Setting standards for information retention and disposal (e.g., retention periods and methods of disposal) for various series/types of digital records and publications.		X	X	X	X

Other standards and the units with authority over setting them.
Statewide Technical Architecture, created by the Office of Information Technology Services, in the Office of the Governor, which contains standards for data management and information technology. A copy of the document is available at: http://www.ncsta.gov/

Additional information.
Chapter 125.11 of the General Statutes of North Carolina states that the State Library 'shall be the official, complete, and permanent depository for all State publications,' regardless of publication format. The authority for collecting and making these publications accessible rests with the State Library of North Carolina.   However, the General Schedule for North Carolina agencies, which is put forth by the Office of Archives and History, indicates that 10 copies of publications should come to the State Library.

The State Archives authorized under General Statutes 121: 121.4 -To conduct a records management program, including the operation of a records center or centers and a centralized microfilming program, for the benefit of all State agencies, and to give advice and assistance to the public officials and agencies in matters pertaining to the economical and efficient maintenance and preservation of public records. To preserve and administer, in the North Carolina State Archives, such public records as may be accepted into its custody, and to collect, preserve, and administer private and unofficial historical records and other documentary materials relating to the history of North Carolina and the territory included therein from the earliest times. The Department shall carefully protect and preserve such materials, file them according to approved archival practices, and permit them, at reasonable times and under the supervision of the Department, to be inspected, examined, or copied: Provided, that any materials placed in the keeping of the Department under special terms or conditions restricting their use shall be made accessible only in accordance with such terms or conditions.

Preservation of Permanently Valuable Records. Public records certified by the Department of Cultural Resources as being of permanent value shall be preserved in the custody of the agency in which the records are normally kept or of the North Carolina State Archives.

The North Carolina State Archives is authorized by General Statutes 132 and 121 to be the official archival agency for North Carolina, to establish a records management program, including, through the North Carolina Historical Commission, to make orders, rules, and regulations to examine and give advice and assistance to public officials and agencies in regard to preserving or disposing of the public records in their custody. This includes providing guidelines in the management of electronic records and the implementation of record retention and disposition schedules for those records.

The Statewide Technical Architecture, put forth by Office of Information Technology Services (ITS) provides standards for North Carolina file formats: 2.2.1. The standard file format for exchanging accessible, non-editable documents is Portable Document Format (PDF); 2.2.2. The standard file format for exchanging facsimile and scanned documents is Tagged Image File Format for Image Technology (TIFF/IT); 2.2.3. The standard file formats for exchanging raster based color documents, drawings, or photographs include Graphical Interface Format (GIF 89a) and Joint Photographic Experts Group (JPEG); 2.2.4. The standard file format for exchanging editable word processing documents is Rich Text Format (RTF); 2.2.5. The standard file formats for exchanging

computer aided design documents are the Initial Graphics Exchange Specification (IGES) and Data Exchange File (DXF); 2.2.6. The standard file format for exchanging moving images and audio is the Motion Picture Experts Group (MPEG-1); 2.2.7. The standard file formats for exchanging editable vector based graphics such as line drawings are the Computer Graphics Metafile (CGM) and Scalable Vector Graphics (SVG) formats.

The Statewide Technical Architecture also requires agencies to comply with the Public Database Indexing Guidelines and Recommendations developed by the North Carolina Records Center (part of the State Archives). Databases must be indexed according to G.S. 132-6.1 (b). The guidelines suggest using NCGILS as the standard protocol for compliance.

The Statewide Technical Architecture recommends that geospatial data be documented in accordance with the Federal Geographic Data Committee's (FGDC) 'Content Standard for Digital Geospatial Metadata, FGDC-STD-001-1998.' Geospatial data should be shared through the NC OneMap program. Other data should be shared through XML. Open-source operating systems may be used only they are commercially distributed and supported.

There is not a list of state-approved software applications, but the Statewide Technical Architecture does recommend that customizations to licensed software are limited. For application architecture, the Statewide Technical Architecture has the following standards: 6.2.1. Promote Web services interoperability by conforming to the Web Services Interoperability (WS-I) Basic Profile; 6.2.2. Transmit Web services messages as Simple Object Access Protocol (SOAP) compliant structures; 6.2.3. Use the Web Services Description Language (WSDL) for describing available services; 6.2.4. Utilize the Universal, Description, Discovery and Integration (UDDI) standard for publication and discovery of Web services; 6.2.5. Conform to the eXtensible Markup Language (XML) specification in the development of Web service messages; 6.2.6. Use the XML Schema specification for defining the structure, content, and semantics of XML-based messages; 6.2.7. Invoke services over Hypertext Transfer Protocol (HTTP).

The Statewide Technical Architecture refers to the Office of Archives and History for guidelines for storing electronic documents, including imaging system guidelines, storage media, and content indexes.

Section 2.1b. Services Provided to EXECUTIVE Agencies

The following units provide the services, specified below, to EXECUTIVE agencies. If services are provided by multiple units, the appropriate boxes are checked.

	Services not provided	Library provides services	Archives provides services	Records Manage-ment provides services	Others (See below)
Storage for digital information.		X			X
Consultation and training services on digital information creation.			X	X	X
Consultation and training services on digital information management.			X	X	X
Consultation and training services on digital information preservation.			X	X	
Consultation and training services on digital information preservation.			X	X	
Preservation (e.g., migration, reformatting).			X	X	
Access (e.g., search engine).		X			X
Certification (e.g., trustworthiness of system, backups sufficient).					

Other services provided and the units that provide them.
Storage: Office of Information Technology Services(ITS) is currently exploring the possibility of offering a Data Warehousing enterprise-wide solution to state agencies. In phase one, they plan to focus primarily on the Office of State Personnel and the Office of the State Controller, who utilize SAS software. Additionally, they do 'host' files from state agencies in a very limited capacity for a fee.

Additional information.
Storage: The State Library has some digital publications stored on its servers and is testing Endeavor ENCompass system as a means of public access to these stored documents.

Consultation/Training: The Office of Archives and History does provide consultation to state agencies regarding digital information-its creation, management and preservation. This advice is, in part, based on the NC ECHO guidelines, created through North Carolina ECHO, Exploring Cultural Heritage Online, project run by the State Library. NC ECHO is the World Wide Web's doorway to the special collections of North Carolina's libraries, archives, museums, historic sites, and other cultural institutions. It is an evolving statewide, collaborative access to special collections and digitization project. www.ncecho.com

Access: The Office of Information Technology Services (ITS) runs the state-wide search engine (State Portal at http://www.ncgov.com that provides access to current digital information on the Internet appearing on state agency Web sites.

Certification: The State Archives explored the possibility of providing a certification program for digital materials but was unable to pursue it because of lack of resources.

Section 2.2a. Setting Standards for LEGISLATIVE Agencies

The following units have authority for setting standards, specified below, for digital information created or maintained by LEGISLATIVE agencies. Multiple boxes are checked to reflect authority that is shared or delegated.

	Authority not assigned	Library has authority	Archives has authority	Records Manage-ment has authority	Others (See below)
Setting data management standards and or guidelines for information creation (e.g., metadata, file formats).			X	X	
Setting information technology standards and or guidelines for information creation (e.g., state approved software applications).					X
Setting standards for information retention and disposal (e.g., retention periods and methods of disposal) for various series/types of digital records and publications.		X	X	X	X

Other standards and the units with authority over setting them.
The Information Technology Division of the General Assembly runs a comprehensive bill drafting program and GIS system, which set standards for the creation of information into these systems. The GIS systems maintains voting district information. All bills which are brought to the floor are printed out into a 'bill jacket' as the permanent record, but the bill system maintains more complete information about drafts.

Additional information.
Chapter 125.11 of the General Statutes of North Carolina states that the State Library 'shall be the official, complete, and permanent depository for all State publications,' regardless of publication format. The authority for collecting and making these publications accessible rests with the State Library of North Carolina.

This information is also incorporated into the General Schedule for North Carolina agencies.

The State Archives authorized under 121: 121.4-To conduct a records management program, including the operation of a records center or centers and a centralized microfilming program, for the benefit of all State agencies, and to give advice and assistance to the public officials and agencies in matters pertaining to the economical and efficient maintenance and preservation of public records. To preserve and administer, in the North Carolina State Archives, such public records as may be accepted into its custody, and to collect, preserve, and administer private and unofficial historical records and other documentary materials relating to the history of North Carolina and the territory included therein from the earliest times. The Department shall carefully protect and preserve such materials, file them according to approved archival practices, and permit them, at reasonable times and under the supervision of the Department, to be inspected, examined, or copied: Provided, that any materials placed in the keeping of the Department under special terms or conditions restricting their use shall be made accessible only in accordance with such terms or conditions.

Preservation of Permanently Valuable Records. Public records certified by the Department of Cultural Resources as being of permanent value shall be preserved in the custody of the agency in which the records are normally kept or of the North Carolina State Archives.

Section 2.2b. Providing Service to LEGISLATIVE Agencies

The following units provide the services, specified below, to LEGISLATIVE agencies. If services are provided by multiple units, the appropriate boxes are checked.

	Services not provided	Library provides services	Archives provides services	Records Manage-ment provides services	Others (See below)
Storage for digital information.		X			X
Consultation and training services on digital information creation.			X	X	X
Consultation and training services on digital information management.			X	X	X
Consultation and training services on digital information preservation.			X	X	
Consultation and training services on digital information preservation.			X	X	
Preservation (e.g., migration, reformatting).			X	X	
Access (e.g., search engine).		X			X
Certification (e.g., trustworthiness of system, backups sufficient).					

Other services provided and the units that provide them.
The Information Technology Division of the General Assembly runs a comprehensive bill drafting program and GIS system. The GIS system maintains voting district information. The system stores the information and the Information Technology Division provides guidelines for how to create bills, how they need to be handled, and how they should be stored. The bill system has gone through upgrades and older information is migrated forward and reformatted where necessary. The system is backed up on a regular basis and is searchable back to 1985 on the Web.

The Office of Archives and History would provide both access and storage of digital information if asked to do so. We are required by statute GS §121.5. They would also provide consultation and training services if asked to do so.

Additional information.
Storage/Access: The State Library has some digital publications stored on its servers. The State Library is testing the Endeavor ENCompass system as a means of access.

Consultation/Training: The Office of Archives and History does provide consultation to state agencies regarding digital information-its creation, management and preservation. This advice is, in part, based on the NC ECHO guidelines, created through North Carolina ECHO, Exploring Cultural Heritage Online, a project run by the State Library. NC ECHO is the World Wide Web's doorway to the special collections of North Carolina's libraries, archives, museums, historic sites, and other cultural institutions. It is an evolving statewide, collaborative access to special collections and digitization project. www.ncecho.com

Access: The Office of Information Technology Services (ITS) runs the state-wide search engine (State Portal at http://www.ncgov.com that provides access to current digital information on the Internet appearing on state agency Web sites.

Section 2.3a. Setting Standards for JUDICIAL Agencies

The following units have authority for setting standards, specified below, for digital information created or maintained by JUDICIAL agencies. Multiple boxes are checked to reflect authority that is shared or delegated.

	Authority not assigned	Library has authority	Archives has authority	Records Manage-ment has authority	Others (See below)
Setting data management standards and or guidelines for information creation (e.g., metadata, file formats).			X	X	
Setting information technology standards and or guidelines for information creation (e.g., state approved software applications).					X
Setting standards for information retention and disposal (e.g., retention periods and methods of disposal) for various series/types of digital records and publications.		X	X	X	

Other standards and the units with authority over setting them.
The Administrative Office of the Courts (AOC) Technology Services Division (TSD) is responsible for creating and enforcing all technology standards for the court system of North Carolina. AOC TSD is comprised of several groups responsible for maintaining these standards including Applications Development, Network Services, Operations and Technical Support, Help Desk, Quality Assurance Office, and Project Management Office. AOC Court Services Division (CSD) is responsible for providing training and on-site support to court offices across the state on record management support and guidelines.

Through legislation passed in the 2005 Session, the General Assembly assigned authority to the Information Technology Services for project management of IT projects. As part of that authority, ITS can set standards and guidelines for data management.

Additional information.
Using input from all court constituents, via the strategic planning process, AOC TSD makes recommendations for the creation of new applications and the expansion of existing applications. Depending of the size of the initiative, final approval is contingent upon the AOC Director's approval and available funding.

Chapter 125.11 of the General Statutes of North Carolina states that the State Library 'shall be the official, complete, and permanent depository for all State publications,' regardless of publication format. The authority for collecting and making these publications accessible rests with the State Library of North Carolina.

This information is also included in the General Schedule for North Carolina agencies.

The State Archives authorized under 121: 121.4 -To conduct a records management program, including the operation of a records center or centers and a centralized microfilming program, for the benefit of all State agencies, and to give advice and assistance to the public officials and agencies in matters pertaining to the economical and efficient maintenance and preservation of public records. To preserve and administer, in the North Carolina State Archives, such public records as may be accepted into its custody, and to collect, preserve, and administer private and unofficial historical records and other documentary materials relating to the history of North Carolina and the territory included therein from the earliest times. The Department shall carefully protect and preserve such materials, file them according to approved archival practices, and permit them, at reasonable times and under the supervision of the Department, to be inspected, examined, or copied: Provided, that any materials placed in the keeping of the Department under special terms or conditions restricting their use shall be made accessible only in accordance with such terms or conditions.

Preservation of Permanently Valuable Records. Public records certified by the Department of Cultural Resources as being of permanent value shall be preserved in the custody of the agency in which the records are normally kept or of the North Carolina State Archives.

Section 2.3b. Providing Service to JUDICIAL Agencies

The following units provide the services, specified below, to LEGISLATIVE agencies. If services are provided by multiple units, the appropriate boxes are checked.

	Services not provided	Library provides services	Archives provides services	Records Manage-ment provides services	Others (See below)
Storage for digital information.		X			X
Consultation and training services on digital information creation.			X	X	X
Consultation and training services on digital information management.			X	X	X
Consultation and training services on digital information preservation.			X	X	X
Consultation and training services on digital information preservation.			X	X	X
Preservation (e.g., migration, reformatting).			X	X	X
Access (e.g., search engine).		X			X
Certification (e.g., trustworthiness of system, backups sufficient).					

Other services provided and the units that provide them.
Storage: The Administrative Office of the Courts (AOC) Technology Services Division (TSD) Operations and Technical Support provide enterprise-wide storage. AOC TSD Network Services(LAN Services) provides for storage on distributed servers. Offsite storage is provided for copies of backups and archived data. Archive CDs of financial data is sent to each county clerk's office. We have a few small distributed applications where data is stored on PCs.

Consultation: AOC TSD Applications Development provides consultation and training in the creation of new software applications only to in-house resources. AOC TSD Applications Development (Database Administration) provide consultation and training in the management of digital information only to in-house resources. AOC Court Services Division (CSD) provides records management guidelines and policies. They advise court offices across the state on records management issues. End user training on software applications is conducted by both AOC TSD and CSD. This includes how to request security, how to connect/access the system, and how to use the system. Consultation and training services on data access from a technical architecture (security and network) perspective are provided by AOC TSD only to in-house resources. AOC Legal Services provides guidance for in-house staff in the development of applications and in questions of availability. AOC TSD Operations and Technical Support provide multi-level backups both on-site and off-site. This includes full system backups, incremental backups, selected system backups. AOC TSD Operations and Technical Support also conduct routine full disaster recovery testing at a remote `hot' site. AOC TSD Applications Development provides data archive functions for many applications.

Access: AOC TSD provides an open source search engine for its Web site. Through legislation passed in the 2005 Session, the General Assembly assigned authority to the Information Technology Services for project management of IT projects. As part of that authority, ITS can set standards and guidelines for data management.

Additional information.
Storage/Access: The State Library has some digital publications stored on its servers. The State Library is testing the Endeavor ENCompass system as a means of access. The Office of Archives and History would provide both access and storage of digital information if asked to do so. We are required by statute GS§121.5.

Consultation: The Office of Archives and History does provide consultations to state agencies regarding digital information-its creation, management and preservation. This advice is, in part, based on the NC ECHO guidelines. www.ncecho.com

Access: The Office of Information Technology Services (ITS) runs the state-wide search engine (State Portal at http://www.ncgov.com that provides access to current digital information on the Internet appearing on state agency Web sites.

The Administrative Office of the Courts does its own records retention and disposition in consultation with

Archives and Records Section.

Section 3. State Government Digital Information Preservation Activities

This section includes descriptions of past or current digital preservation activities in the state.

TITLE OF THE STATE GOVERNMENT DIGITAL INFORMATION PRESERVATION ACTIVITY:
Digital Preservation Policy Framework for the N.C. Department of Cultural Resources

SHORT DESCRIPTION:
The State Library of North Carolina and the North Carolina State Archives have combined forces within the Dept. of Cultural Resources to create a Digital Preservation Policy Framework for the State of North Carolina. The framework formalizes DCR's commitment to the permanent preservation of digital state government assets produced by the State of North Carolina. It is built upon two legislative mandates that require the State Library and State Archives to collect publications and records, respectively. The framework identifies the scope of information to be included in a state government preservation program, the principles on which a digital preservation will be built, the roles and responsibilities of different interested parties, and access to information in the preservation program. The framework was presented to the Secretary of Department (appointed by the Governor) where it was favorably received. The State Library and State Archives were both asked to submit expansion budget requests for FYI 2006-2007 to fund positions and operations to support the development of a digital preservation program as called for in the Digital Preservation Policy Framework. No budget decisions have been made at this time.

LINKS TO RELATED WEB SITES OR PROJECT DOCUMENTS:
There is no link yet because we have not received the final approval to publish the policy.

CONTACT FOR THIS ACTIVITY:
State Library of North Carolina
digital.info@ncdcr.gov

Druscie Simpson, State Archives
Druscie.Simpson@ncmail.net

TITLE OF THE STATE GOVERNMENT DIGITAL INFORMATION PRESERVATION ACTIVITY:
Access to State Government Information Initiative (ASGII)

SHORT DESCRIPTION:
The Access to State Government Information Initiative (ASGII) begun in December 2002, is a project established to research and find solutions for providing permanent public access to North Carolina State government information in all formats. The project is funded by the Library Services and Technology Act Statewide Leadership Grant. Year One of the project included primary and secondary research and conducting outreach and education to state agencies. Primary research consisted of surveying state agencies to determine current publishing practices. A white paper on the status of North Carolina government information was produced. In Year Two, the project convened a workgroup of stakeholders to participate in creating a plan of action for providing permanent public access to state government information. In Years Three and Four, staff have worked toward implementing the plan developed in Year 2, primarily through pilot tests of digital repository systems and policy development (see questions 22-26). Staff also conducted a survey of state depository libraries to determine how digital government information was affecting patron access and the use of the paper documents collections. Librarians were also queried on their views about the need for preservation of digital state information, how that should be handled, and who should be responsible. During Year Four, the project is hosting a 'Digital Preservation in State Governments: Best Practices Exchange 2006' in which archivists, records managers, and librarians from State Libraries and State Archives will come together to discuss and exchange ideas and practices for making digital preservation in state government a reality. Funding for Year 5 will be requested in Spring 2006 to continue pilot tests and program and policy development for a statewide digital preservation program. Pilot tests are described separately.

LINKS TO RELATED WEB SITES OR PROJECT DOCUMENTS:
The project Web site is at: http://statelibrary.dcr.state.nc.us/digidocs/index.html

The White Paper is at: http://statelibrary.dcr.state.nc.us/digidocs/Workgroup/WhitePaper.pdf

CONTACT FOR THIS ACTIVITY:

State Library of North Carolina
digital.info@ncdcr.gov

TITLE OF THE STATE GOVERNMENT DIGITAL INFORMATION PRESERVATION ACTIVITY:
Digital Publications Repository

SHORT DESCRIPTION:
The State Library of North Carolina, as part of the ASGII project (see questions 27-30) is attempting to create a repository of digital state publications. This project has multiple components: selection of documents, methods for getting publications into the repository, descriptive information about each publication, long-term preservation, and access to digital publications. The project began in 2004. So far, testing has been done using ENCompass, a digital asset management program licensed by Endeavor Information Systems. The State Library intends to allow agencies to deposit publications through a form-based website, using the program FormRouter. ENCompass has presented multiple challenges, including the need for a high level of technical expertise (which the State Library does not have), a clunky staff client for creating metadata, and difficulty getting a scalable workflow. As a result, the State Library is also considering testing other digital asset management systems, including CONTENTdm and AGent for Digital Collections, a new product under development by Autographics.

Beneficial outcomes of the project have been the creation of an ideal workflow for processing digital publications and the creation of guidelines for describing state government publications using Qualified Dublin Core. There are now over 800 items associated with the repository. Only three major agencies have contributed publications to the test repository. The use of FormRouter to allow agencies to deposit items via a Web interface has stalled due to the need to expand the licensing agreement, but it should be functional this spring. ENCompass provides a Web-based access mechanism for the publications, but there has been no preservation work done so far to the publications. All publications collected to date have been in PDF format.

LINKS TO RELATED WEB SITES OR PROJECT DOCUMENTS:
Because the ENCompass repository is a testing repository, there is no public access to the collection at this time. The website for publications deposit has not yet been established. Kristin Martin, project manager for the ENCompass project in the Library, has written an article titled 'Moving into the Digital Age: A Conceptual Model for a Publications Presentations Repository.' Internet Reference Services Quarterly, vol. 11, no. 1 (Spring 2006): forthcoming.

CONTACT FOR THIS ACTIVITY:
State Library of North Carolina
digital.info@ncdcr.gov

TITLE OF THE STATE GOVERNMENT DIGITAL INFORMATION PRESERVATION ACTIVITY:
North Carolina Web Archiving Projects

SHORT DESCRIPTION:
Since September 2004, the State Library and State Archives have been involved with three major Web site capture projects.

Project 1: The State Library participated in an IMLS grant project offered by the Illinois State Library (ISL) that allowed other State Libraries to use an open-source tool developed by the ISL to crawl, capture, and store state agency Web sites (project known as Capturing E-Publications (CEP)). The tool was developed for ISL by Larry Jackson at the University of Illinois at Urbana-Champaign. From September 2004-September 2005, the University of Illinois crawled, captured, and stored approximately 200 domains from North Carolina State Government. At the end of September 2005, the archive and the open-source 'crawling tool' transferred to a server at the State Library of North Carolina. Unfortunately, the first crawl conducted in-house by the State Library encountered technical problems. Resolution of these problems requires technical expertise beyond that currently available in the State Library and as a result, future crawls of NC state government Web sites has been abandoned for the time being. The archive of Web sites is stored in compact format using CVS and is available to staff. No direct public access is currently available.

Project 2: The State Library and State Archives jointly participated in a pilot test of a new service being offered by the Internet Archive called Archive-It. The service allows organizations to collect Web sites of their choosing which are then stored at the Internet Archive in .ARC format. Copies of the archive can also be made available for North Carolina to store locally. Access is available through the Internet Archive's Wayback Machine and results

are also searchable. North Carolina participated in the pilot from September-November, 2005, crawling approximately 275 domains weekly. We were impressed enough with the pilot results that we will be signing a contract for the service when it rolled out a production product this spring.

Project 3: The State Library is also participating in a Web archiving project that involves testing open-source tools for the semi-automated collection of Web sites - the Web Archives Workbench - developed by OCLC through an NDIIPP partnership. North Carolina is a supporting partner and content provider for the NDIIPP project. Eventually, objects captured using WAW tools will then be ingested into a variety of digital preservation repositories, although to date, OCLC has only built links to its own Digital Archive. The WAW also allows for the discovery of additional domains that are part of the North Carolina government Webspace.

LINKS TO RELATED WEB SITES OR PROJECT DOCUMENTS:
CEP Web site: http://www.cyberdriveillinois.com/departments/library/who_we_are/cep.html North Carolina's web archive through CEP is not publicly accessible.

The Internet Archive has created an information/demonstration site of Archive-It: http://www.archive-it.org. North Carolina's three pilot collections (organized by type of government body) can be accessed through the search mechanism. As Archive-It is rolled out into production, there will be a site directly from the State Library and State Archives.
OCLC handles most of the information about the WAW. Information about the NDIIPP project, ECHO DEPository, led by the University of Illinois at Urbana-Champaign, is available at http://www.ndiipp.uiuc.edu.

The North Carolina State Government Web Site Archives is at: http://webarchives.ncdcr.gov/

CONTACT FOR THIS ACTIVITY:
Kelly Eubank, North Carolina State Archives
Kelly.Eubank@ncmail.net

State Library of North Carolina
digital.info@ncdcr.gov

TITLE OF THE STATE GOVERNMENT DIGITAL INFORMATION PRESERVATION ACTIVITY:
North Carolina State Archives Email Research Project

SHORT DESCRIPTION:
The State Archives has developed an open-source application for the capture, preservation, and access to government email accounts as part of a NHPRC fellowship project.

The State Archives is currently in the testing stage which involves the implementation of a server-based facility using IMAP protocol to collect email messages. Components have been developed to take the contents of this store and export email as a set of XML files. The design of the overall system is complete, including the XML Schema for the core XML content files and the code responsible for converting email messages to XML. Attachments are currently being handled through an open source third party application.

The North Carolina Archives and History has identified, scheduled and accessioned electronic mail from at least 2 different state agencies. In 2002, we scheduled and accepted electronic mail from the Governor's office. These records necessitated involvement of the Governor's Chief Records officer, the Governor's Information Technology staff as well as staff from the Archives Records Management program and Information Technology. Additionally, we have accepted the former Superintendent of School's email for transfer to the Archives.

LINKS TO RELATED WEB SITES OR PROJECT DOCUMENTS:
No information provided

CONTACT FOR THIS ACTIVITY:
Druscie Simpson, State Archives
Druscie.Simpson@ncmail.net

Section 4. Training Needs for Digital Preservation Related Activities

Level of training needed for the digital preservation capabilities, specified below.

	Training already provided	Basic training needed	Advanced training needed
Identify the type and amount of digital information throughout the state.			X
Select and appraise state government information in digital form.			X
Identify key stakeholders related to specific digital information (other local/state agencies, other states, private sector, etc.).			X
Negotiate and make agreements with key stakeholders to preserve digital information.		X	
Acquire state government information in digital form for holdings.			X
Manage state government information in digital form (metadata, reformatting, etc.).			X
Manage the ingest of digital information into a repository.			X
Manage the long-term storage of digital information in a repository.			X
Develop mechanisms to monitor the long-term usability of state government information in digital form.		X	
Make state government information in digital form accessible to users.			X
Produce a disaster and recovery planning for state government information in digital form.			X
Manage copyright, security, and other legal issues of relevance to state government digital information.			X
Other (See below).			X

Other training needed for digital preservation capability.
Staff had difficulty understanding exactly what was intended by the word 'training.' We approached it by defining basic training as training aimed at those who have no knowledge or experience at all. We considered advanced training to be just that but were not sure that 'training' was exactly what we need -- we need further knowledge and understanding of some of these concepts and applications as well as how to manage up the Administrative chain and get buy-in and approval.

Additional information on existing training programs.
In North Carolina, we are at the end of our research phase regarding digital information. Now we need to move into the implementation phase of digital preservation activities.

Three staff members (2 from the State Library, 1 from the State Archives) attended the Cornell University Workshop on Digital Preservation Management which was a tremendous learning opportunity.

In March 2006, North Carolina is hosting a 'Best Practices Exchange' in which states (archives and libraries) will come together to share and learn from the practices and experience of colleagues in the spirit of the LC NDIIPP's partnership efforts for the states.

Through our pilot tests for Web-archiving and digital publications and records repository building, we are developing capabilities in the areas of collecting, appraising, describing (metadata), storing, and providing access to digital archives. We are also developing capabilities in defining effective workflows for processing digital materials for preservation and access.

Section 5. State Government Digital Information Currently At-Risk #1

This section includes examples of state government digital information that is at-risk of deteriorating or being altered or lost through format or technological obsolescence, policy or procedural gaps, or financial constraints.

DESCRIPTION OF AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
At risk digital information in North Carolina includes government websites, digital documents, reports, records, streaming media, and electronic mail in all 3 branches of government. Agencies and local government continue to employ more innovative technologies to conduct business and communicate with their constituents. Unfortunately, legislation has not kept pace with the implementation of these technologies, resulting in minimal legislative support for the preservation of these at risk formats.

CONDITIONS CAUSING INFORMATION TO BE AT-RISK:
North Carolina's government structure is a very decentralized. While there are some guidelines and standards that cover all agencies, agencies generally feel free to create and destroy Web sites as they please, hosting them wherever they want, and selecting domain names of any kind (.com, .org, .gov, .state.nc.us). There are no longer central 'information' contacts in the agencies who are knowledgeable about the Public Records Laws and the State Publications Depository Law, are aware that websites and digital information are included in these statutes, and monitor agency compliance for all publication/records formats. New information technologies allow more distributed creation and dissemination of agency information via the Internet. As a result, the Library and Archives traditional methods for identifying and collecting information has changed and is more difficult, putting valuable state information at risk.

There is also a lack of awareness and support from the General Assembly regarding the fragility of this information. As a result, the Library and Archives struggle to meet their statutory commitment without increased financial support. Lean tax revenue years have contributed to this lack of funding as well.

STRATEGIES CONSIDERED TO PRESERVE AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
The State Archives, working in conjunction with two other states, Delaware and Wyoming, developed Guidelines for Maintaining and Preserving Records of Web-Based Activities, which include a Website Content Assessment Table for agencies to use to evaluate how frequently for Web site snapshots to be taken. The guidelines require agencies to periodically send snapshots of their websites on CDs to the Archives, according to the frequency indicated on the table. So far, only the Dept. of Cultural Resources has complied. However, the agency copied all of the directories with Web material onto the CD, so it included not only the Web site as it existed to the public, but also lots of extraneous materials that were never made public or were long since removed and therefore not public on the date of the snapshot.

Realizing the difficulty of getting agencies to take snapshot copies of their Web site, the State Archives and State Library began to explore more automated methods to capture Web sites (see questions 37-40). The most immediately promising method is the Archive-It service offered by the Internet Archive. The State Archives and State Library piloted this service in Sept-Nov. 2005. Based on the experiences of the pilot, North Carolina intends to sign up for the subscription service. The subscription is $10,000 annually for the collection of up to 10 million objects, .5 terabytes of data, from up to 300 starting points. The public will have access to the archived Web sites from the Archive's and Library's Web pages. North Carolina also plans to store the archived files locally in a dark archive.

DESCRIPTION OF AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
Born-digital state publications produced by North Carolina state agencies.

CONDITIONS CAUSING INFORMATION TO BE AT-RISK:
The number and percentage of digital-only (born-digital) publications produced by state government was approximately 50% in 2003, with that number expected to grow (from the State Library's White Paper). The State Library has responsibility to collect and preserve these publications, as part of its responsibilities laid out in G.S. 125-11, the North Carolina Depository Library System Act. However, the rules and systems for the Depository System are set up with paper-based documents in mind, so the State Library has not been receiving the web-based only publications. State agencies may or may not store older publications, and even when they do, their circumstances are tenuous, sometimes just residing on the hard drive of a staff member's computer. Publications are produced in a variety of formats, with PDF and HTML being the most popular, but proprietary software and audio and video formats are common too.

Much of the information exists in a proprietary format. Additionally, information constantly changes and some information is lost as it is re-written. As agencies migrate to newer software versions or elect to move to a new format, information is lost in the migration. Often, the information technology groups who act as support for the business group are not aware of the records retention requirements surrounding the information. It is difficult to get the agencies involved in those conversations. Additionally, DCR staff needs to be trained and needs to understand how their actions affect the information and our ability to meet our statutory mandate regarding the preservation and access of permanently valuable information.

STRATEGIES CONSIDERED TO PRESERVE AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
Beginning with the Access to State Government Information Initiative in 2002 (see questions 27-30), the State Library has been investigating the incorporation of digital publications into its collection. Progress has been slower than we prefer, mainly given the lack of technical expertise available. The State Library is in the process of expanding the license of FormRouter, a program that will allow agencies to deposit publications through a website. As part of ASGII, the State Library conducted a survey of the other depository libraries to garner ideas and preferences as to how digital publications can be incorporated into the depository system. The State Library has been piloting the use of ENCompass to serve as the publications repository (see questions 32-25). So far we have a collection of a little over 800 digital publications. Much work in agency education is required to get agencies to routinely deposit publications.

DESCRIPTION OF AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
Permanently valuable electronic mail (e-mail) communications and attachments are at risk of being destroyed by the content creator.

CONDITIONS CAUSING INFORMATION TO BE AT-RISK:
Users are unaware of their responsibilities regarding electronic mail. Often, they are unaware that their electronic mail is considered communication and permanently valuable. As such, they do not manage it in the same fashion they manage their paper correspondence files and delete the information. Or, conversely, the user does no management of files and the Archives receives every piece of electronic mail, including permanently valuable, transitory and personal.

Additionally, outside pressure is building from the IT community to stop buying more storage space and delete the information after an arbitrarily designated time period.

Lastly, there is a movement from some circles to exempt electronic mail from the public records law through statutory changes.

STRATEGIES CONSIDERED TO PRESERVE AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
Ideally, one solution to the problem of email management would be a more automated method of selection, or a method that would not require the user to 'click' more than 3 times to classify it as archival. The State Archives has developed a software program to encapsulate the message into an XML envelope but this still requires user interaction. The user has to deem the material archival and drag the email to the 'hmail' folder.
In order to address the push by the IT community, we continue to strive to create relationships with Information Technology Services (ITS), in the Office of the Governor, that runs the service. We need to educate them that email is a public record and subject to records retention schedules. These schedules dictate when particular types of records can be destroyed.

With regards to the outside pressures to exempt email communications, this is a relatively new development. We are discussing strategies related to this issue but it could be that most of it is beyond our control.

DESCRIPTION OF AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
State government statistical data, such as employment data, population data, data on public schools, data about crime control and public safety, etc.

CONDITIONS CAUSING INFORMATION TO BE AT-RISK:
North Carolina is increasingly storing statistical information in databases, for ease of use, manipulability, etc. These databases are then migrating to the Web, where the public can use the web-enabled databases to extract the information they need. Much of this information, formerly printed out in paper publications as quarterly or annual reports, is now available only through Web-enabled databases with no print equivalent. As a result, the database becomes the object of record. With databases frequently updated and changed, information is at risk for

loss. These databases also frequently run on propriety platforms or require special knowledge for manipulation. This increases the risk of software and hardware obsolescence for the database.

Information is being created by state government agencies without serious consideration for long-term preservation and access. Often digital systems and workflows are being implemented without planning and funding for migration. The general response in implementing such systems is 'Can we throw away the paper now?' with no regard to the records retention and disposition schedule. Education is a major key in rectifying this, but shortages of records analysts and library staff is rendering this very difficult when pitted against vendors eager for a sale.

STRATEGIES CONSIDERED TO PRESERVE AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
In North Carolina Public Records Law, G.S. 32-6.1 (b), there is a requirement that all new databases be indexed to make sure the public is aware and can access the information contained within them. The North Carolina Office of Archives and History developed Public Database Indexing Guidelines and Recommendations: http://www.ah.dcr.state.nc.us/e-records/pubdata/default.htm in 1996, however, this did not address preservation issues, nor was it ever effectively implemented. North Carolina's current Web capture projects are unable to capture Web-enabled databases, so they are excluded from this effort. This is as far as we have come with databases at this point.

DESCRIPTION OF AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
State government data, such as GIS records, vital statistics data, personnel files that only exist in electronic format.

CONDITIONS CAUSING INFORMATION TO BE AT-RISK:
The State Archives' traditional methods for identifying and collecting information has changed. State agencies increasingly use technology in more innovative ways. The push for these efforts comes from a desire to serve the public more innovatively or to use technology to increase access to information. Also, there is a push to move towards more compact storage.

Most state agencies are unaware of the statutory obligations surrounding this information or utilize technology more productively. Ideally, the agency would contact the appropriate organization in the planning stages. More often, however, they contact the agency when they need to change their schedule after they have begun new processes.

Lastly, there is a lack of awareness and support from the General Assembly regarding the fragility of this information. As a result, the Library and Archives struggle to meet their statutory commitment without increased financial support. Lean tax revenue years have contributed to this lack of funding as well.

STRATEGIES CONSIDERED TO PRESERVE AT-RISK STATE GOVERNMENT DIGITAL INFORMATION:
In terms of electronic mail and other communications, the Archives and Records Management Sections has moved to a more proactive relationship with State Agencies. We developed a metadata form for the analysts to collect information regarding the materials. Additionally, in agencies in which we are aware of electronic records, the Records Management unit communicates frequently with the Electronic Records Unit to identify these records. Processes are being discussed by which the RM unit or the ER will be in more constant communication with an agency to collect these records and to ensure that we are aware of any changes to the agency's process or utilization of software. Additionally, the section IT is part of the process for identifying records and for developing strategies to handle materials. In this manner, the Archives is aware of the material that is coming and can make provisions to handle it once it comes in rather than have to try to recreate the data with little or no metadata.

At this point, we are cautiously proceeding with an awareness that we need to involve more stakeholders as well as secure more sustainable funding.

Examples of government digital information that was not preserved and is no longer accessible.
Information is lost every time the political administration changes. Our current governor has been recently reelected, and all of the cabinet reappointed, but only some information from the prior administration remains.

In a check of 165 state serial titles, only 50% had back issues available online. The rest replace the older issue with the current issue. If the Archives or Library does not capture the serial issues, they are gone.

There are also examples of entire Web sites that have come and gone. 2003 was the centennial of the Wright Brother's flight from Kitty Hawk. There were a number of celebrations, and a specific Web site, http://www.firstflightnc.com dedicated to the event. The site was available from 2000-early 2005 before being removed. The good news is that North Carolina did capture a copy of the site, from Sept. 2004 to its removal in 2005 through the CEP Web capture project.

Section 6. Enterprise Architecture

The following section describes the state's and corresponding units' awareness of and involvement in their state's Enterprise Architecture efforts.

Aware of state's Enterprise Architecture efforts.
Yes

Involved in state's Enterprise Architecture efforts.
Yes

Nature of involvement in the state's Enterprise Architecture efforts, if appropriate.
The State Library and the State Archives know about the Statewide Technical Architecture.   We are also aware of ITS' strategy to implement enterprise wide document management, including website documents. At times we have been called in to conference about the database indexing requirements, metadata standards for federated systems, and in the past year Archives/Records staff attended a meeting about auditing requirements in which records management schedules were discussed. Staff members have been asked to review changes to the Enterprise Architecture.

Links to relevant documentation that describes the unit's involvement in the state's Enterprise Architecture efforts.

Section 7. Additional Thoughts or Comments

We are trying our best, but it is REALLY hard!!!