STATE OF NORTH DAKOTA
DIGITAL ARCHIVES STUDY REPORT

EXECUTIVE SUMMARY

This Executive Summary highlights tactical and strategic recommendations and incremental investments to be made by the State of North Dakota in its people, its core recordkeeping processes, and its enterprise information management systems and technologies to establish a credible level of digital preservation capability over the next five years.

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DIGITAL ARCHIVES STUDY

Executive Summary

Information is fundamental to the operation of government programs and systems. Over the last several decades, North Dakota state employees have increasingly come to depend on digital technologies and sophisticated software to conduct daily business and provide services to a diverse set of information consumers.

This expanding volume of digital content is stored in many different applications and storage repositories across the state in dozens of different file formats. Most of the state's electronic records have yet to be brought under full life cycle records management controls.

Many digital records can only be retrieved, displayed, and printed using the original software application that created the records. In many instances the software application becomes obsolete after only a few years, thereby increasing the likelihood that the records will not be accessible or usable in the future.

The State of North Dakota's increasing reliance on digital technologies places many long-term (10+ years) operational and archival (permanent) electronic records at risk. Unless these digital records are adequately managed and protected, their authenticity and usability over time may become suspect.

The Internet has expanded access to government services and data and has created new ways to interact with the public, the broad business community, regulators and legislators, and to conduct its routine affairs. Stakeholder expectations for transparency, accountability and ready access to government information are on the rise.

The State of North Dakota does not have a central digital preservation repository or the governance framework that is capable of ensuring the transfer, accession, management and access to permanent electronic state government records. The Digital Archives Study recommendations identify actions and investments to move the State of North Dakota forward in its efforts to retain, preserve, maintain and provide access to its electronic records for as long as they are required by law, regulation, or historical interest. It specifically addresses the preservation requirements associated with permanent records that have archival value for the State.

OVERVIEW

The Digital Archives Study findings and recommendations are the result of a one-time appropriation to research and find ways to establish and sustain a digital preservation repository that will preserve and provide access to State of North Dakota electronic government records of permanent historical value.

BUSINESS CASE

Key drivers for the advancement of electronic records management and digital preservation capabilities in the State of North Dakota include:

- Pressure from state agencies on the State Historical Society of North Dakota to accept the transfer of electronic records of historical value
- Risk of loss of state agency records accessioned by the State Archives that are stored on short-term media
- Insufficient resources and expertise available to develop enterprise-level strategy and policy framework to manage the life cycle of electronic records and integrate digital preservation requirements into routine government operations and systems
- Significant growth in digital storage and reliance on third party application, solutions and services to manage government records
- Current funding will not support long-term preservation of permanent electronic state government records

CALL TO ACTION

Investments in people, modernized business processes, and technologies are needed to bring life cycle controls to state government records, including the transfer of agency and local government electronic records from operational systems to the State Archives for permanent preservation and access.

Additional staff and external experts are needed to provide the directions for the State of North Dakota to begin its journey in earnest towards robust and sustainable capabilities to mitigate the obsolescence of long-term electronic government records and archival (permanent) materials. Establishing and supporting an enterprise-level digital preservation program will enable the State Archives to provide access to permanent records over time and over successive generations of technologies.

This Executive Summary highlights tactical and strategic recommendations and incremental investments to be made by the State of North Dakota in its people, its core recordkeeping processes, and its enterprise information management systems and technologies to establish a credible level of digital preservation capability over the next five years.

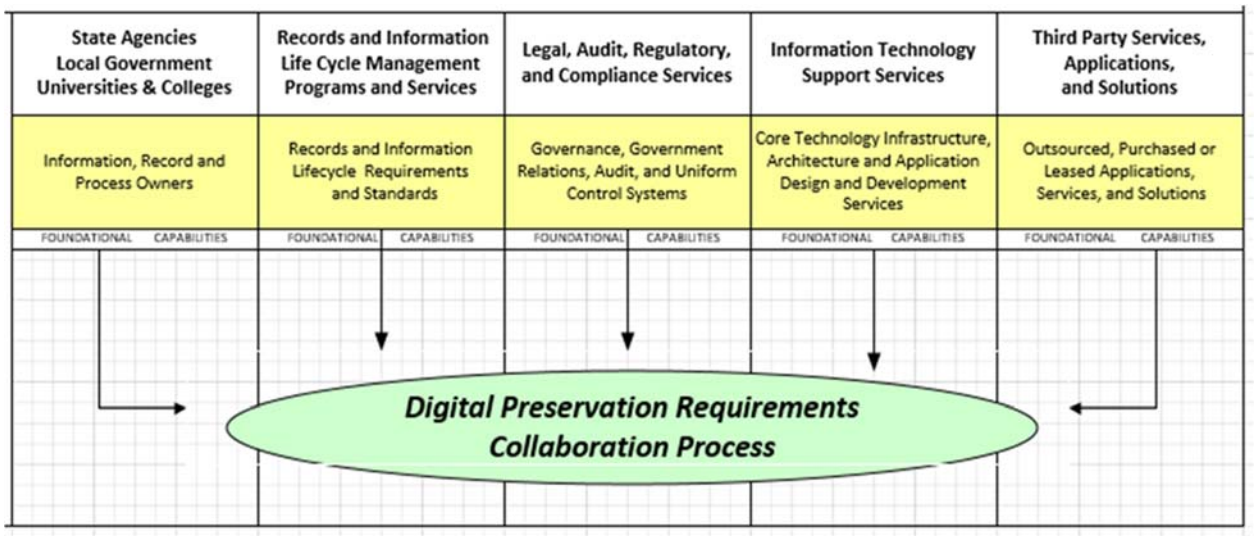
KEY RECOMMENDATIONS

INVEST IN PEOPLE

1. Hire and support two experienced technical and professional electronic records management and digital preservation experts
2. Develop a Digital Preservation Policy to codify the State's commitment to long-term records preservation and access and assign responsibilities
3. Establish a Working Group to champion digital preservation standards and strategies under the Enterprise Architecture governance and domain structure
4. Identify skills and training needed for electronic records management and digital preservation and provide on-going educational opportunities for ITD, SHS, and other agency personnel

MODERNIZE RECORDS AND ARCHIVES MANAGEMENT PROCESSES

1. Charter the Digital Preservation Working Group and establish working relations with the Architecture Review Board and State Information Technology Advisory Group
2. ITD and SHS adopt a planning horizon of four to six years to fully implement a central standards-based digital preservation repository that can ingest, preserve and provide access to permanent state government records of archival value
3. Expand the inventory of electronic records maintained by agencies to include detailed descriptive information about records stored in digital format that must be retained for longer than 10 years to support preservation planning
4. Create profiles of electronic records producing agencies and programs to determine current and future volumes of long-term and permanent records series likely to be stored in the centralized preservation environment
5. Update procedures and guidance material to support the transfer of electronic records from agencies to the State Archives and share with a broad range of digital preservation stakeholders



LEVERAGE TECHNOLOGY

1. Adopt specifications for a Level Four digital repository (conforms to ISO 14721 and other standards) in ITD and SHS plans for a sustainable centralized digital preservation environment
2. Configure and implement an email archive
3. Leverage near-term strategic Information Management initiatives and investments -- such as Enterprise Architecture 2.0 and the migration of the records retention schedules from the mainframe -- for opportunities to incorporate considerations and requirements for the long-term continuity of digital data, information and records
4. Integrate digital preservation standards, good practices and strategies into the State of North Dakota enterprise information technology and management governance and decision-making processes
5. Describe and migrate state agency electronic records already in the custody of the State Archives to network storage; apply findings to development of Submission Agreement templates
6. Embrace community-supported solutions and initiatives to address the challenges of long-term preservation of archival and business records
7. Promote open standard technology neutral file formats to agencies as a risk mitigation strategy for permanent records and for operational records that must be retained longer than 10 years
8. Review and revise media migration and storage renewal strategies to minimize the loss of data and records and facilitate semi-automated transfer of electronic records from document repositories (e.g., FileNet) and operational systems to the preservation environment

COST SUMMARY

This chart provides a summary of the costs associated with Tournesol's recommendations for the State of North Dakota to address its requirements for long-term digital preservation over the next two biennium.

INVEST IN PEOPLE

Category	Description	Unit Cost	Extended Cost	Recommended Funding Source
Staffing	**Digital Archivist**	$126K/year	$262K/ Biennium	SHS
Staffing	**Digital Archive Intern**	$20/hour	$20K/ Biennium	SHS
Staffing	**Electronic Records Analyst**	$72K/year	$144K/ Biennium	ITD

Notes:

1. The Digital Preservation Working Group is projected to use about 5% each of these key stakeholder roles: Enterprise Architect, State Archivist, Electronic Records Analyst, EDMS Administrator, Storage Administrator, Digital Archivist, Security Administrator, Business Continuity Architect

2. Email Archive Support is projected to use about 10% each of these key stakeholder roles: Exchange Administrator, Electronic Records Analyst, EDMS Administrator; 5% each -Storage Administrator, Digital Archivist, Security Administrator

3. Salary estimates were obtained from the Federal Government Job Database (USAJOBS.GOV) and calculated with an additional 26% for benefits on the advice of the North Dakota project team.

MODERNIZE RECORDS AND ARCHIVES MANAGEMENT PROCESSES

Category	Description	Unit Cost	Extended Cost	Recommended Funding Source
Consulting	**Digital Preservation Policy and Strategy**	$180/hour	$50K-100K (onetime)	ITD Onetime
Consulting	**SIP and Transfer Process Design**	$180/ hour	$30K-50K (onetime)	SHS Onetime
Consulting	**Electronic Records Management Program**: Map record series to digital information systems, and train agency personnel on how to assign retention and metadata to electronic records at or near the time of their creation and receipt	$180/ hour	$75K-100K (onetime)	ITD Onetime
Consulting	**Standards Development and Updates**	$180/ hour	$40K-60K (onetime)	ITD Onetime
Consulting	**Statutes Updates**	$180/ hour	$30K (onetime)	ITD Onetime
Consulting	**Digital Preservation Training Workshop for agency personnel**	$180/ hour	$30K (onetime)	SHS Onetime

LEVERAGE TECHNOLOGY

Category	Description	Unit Cost	Extended Cost	Recommended Funding Source
Consulting	**Email Archive Installation & Customization Consultant**	$180/ hour	$120K (onetime)	ITD Onetime
Storage	**Migrated Monthly Transfers to SHS**	$4,975/TB (onetime) $400/TB (monthly maintenance) $158/TB (monthly backup)	$40K (onetime) $160K (maintenance and backup)	SHS
Software	**IBM Content Collector for Email**	$260K/year	$520K/ Biennium	ITD

Notes:

1. Pricing for the IBM Content Collector for Email was obtained by Robert Rogers from Sirius Computer based on 2730 RVUs which equates to 5627 active mailboxes.

2. Storage costs for a monthly migration of agency records to network storage by the State Archives ("Migrated Monthly Transfer") is calculated through the 2017-2018 biennium.

FOR ADDITIONAL INFORMATION ABOUT THIS STUDY

Two additional documents were submitted in support of the Digital Archives Study project that describe in detail what Tournesol found in a current state assessment and elaborate on the recommendations presented in this Executive Summary.

Document Title	Date	Format
FINAL Digital Archives Study Current State Assessment Report	April 7, 2014	PDF
FINAL Digital Archives Study Recommendations Report	June 3, 2014	PDF