

Public records stored as digital images: policy statement and recommended practices

South Carolina Department
of Archives and History
**Archives and Records
Management Division**

Policy statement The South Carolina Department of Archives and History placed this policy into effect on 5 September 2003. It supercedes the policy placed into effect on 24 January 2001.

Purpose

This policy clarifies the position of the South Carolina Department of Archives and History regarding the use of digital imaging technology for the maintenance of public records, as defined by Section 30-4-20(C) of the *Code of Laws of South Carolina, 1976*, as amended.

Authority

Sections 30-1-80 through 30-1-100 of the *Code of Laws of South Carolina, 1976*, as amended, provide the authority for the establishment of this policy.

Scope

This policy statement applies to the records of all public bodies as defined by Section 30-1-10 of the *Code of Laws of South Carolina, 1976*, as amended.

Statement

To ensure accessibility, reduce the risk of premature disposition, and preserve records of permanent (archival) value, the following policy is established for the disposition of public records stored as digital images:

This policy does not supercede existing federal, state, or local laws and regulations that require the maintenance of public records and documents in a prescribed format.





Records with an established retention of ten years or less

State and local government officials can maintain public records that have an established retention¹ of ten years or less in a digital imaging records system and can dispose of the originals after certifying that the digital image records have been visually inspected and are legible and correct and after receiving an authorization for disposal of original records from the South Carolina Department of Archives and History. If the records are vital records, a security copy should be stored off-site in a secure location.

Records with an established retention of more than ten years

State and local government officials can maintain public records with an established retention² of more than ten years in a digital imaging records system and dispose of the originals provided they:

1. ensure the production of appropriate indexes or other finding aids that will provide access to the information contained in the records
2. maintain security copies of the digital records and indexes in off-site storage
3. migrate and convert both the working and security copies of the digital records and indexes either every ten years or sooner if access to them is no longer possible because the digital imaging records system has been upgraded or changed
4. sample both the working and security copies of the digital records and indexes at least once a year to make sure the data is still readable and recopy immediately if loss of information is detected
5. certify that the digital image records have been visually inspected and are legible and correct
6. certify that they have established written procedures and maintain written documentation of compliance with 2-5 above
7. obtain an authorization for disposal of original records in advance from the South Carolina Department of Archives and History.

Those not able to ensure compliance with 1-7 for the established retention period must retain a paper record or a microform that meets state standards.³

If the original medium for the records is digital — as it is, for example, with the procedural or transactional recording of deeds — we *highly recommend* the generation and retention of paper copies or microforms that meet state standards.⁴ If paper or

¹ Retention values must be established through approved records retention schedules developed in accordance with section 30-1-90 of the *Code of Laws of South Carolina, 1976*, as amended.

² Ibid.

³ Microfilm should meet the state standards set out in “Quality Standards and Practices for the Microfilming of Public Records” (Regulations 12-200 through 12-203, *Code of Laws of South Carolina, 1976*, as amended)

⁴ Ibid.



microform copies are not generated and retained for such records, state and local government officials *must* give the Archives written certification of their compliance with 1-7 above before using the digital imaging records system.

Recommendations for the selection and use of digital imaging record systems

The Archives recommends the use of the following guidelines for the design, selection, and operation of digital imaging records systems. These guidelines will help you produce records and copies that will be acceptable in legal proceedings; they will enable you to maintain and retrieve information in ways that will meet your statutory obligations and operational needs as a records custodian; and they will help you respond to requests from the public. These considerations are important, particularly for records that must be kept either for a long time or permanently.

Legally-acceptable records management program

To ensure the acceptance of government records as legal documents — including those stored in digital imaging records systems — they should be maintained and disposed of as part of a legally-acceptable records management program. To conduct such a program you should:

- include every record and all reproductions on records retention schedules that describe each record adequately and define its retention period and manner of disposition. These schedules must be approved by the Archives. They are of two types:

Specific schedules

These schedules are written for records that are unique to a particular agency, office, or jurisdiction. They may list the different physical forms of each record separately — paper, magnetic tape or disk, microfilm, optical disk, CD-ROM, and so forth — because each form may have a unique use, value, and retention period.

General schedules

These schedules cover categories of records that many offices and agencies have in common. They usually do not specify particular physical forms. When you use general schedules, however, you must consider the various reproduction and storage requirements the records' physical forms will dictate.

- carry out records retention and disposition procedures systematically as part of the regular course of business.
- maintain the documentation that supports the development and implementation of retention schedules.
- dispose of records regularly when their retention period has expired, either through destruction or transfer to an archival repository, depending on which the schedule specifies.





Other legal considerations

Government offices and agencies must maintain data in digital imaging records systems according to the terms of the South Carolina Freedom of Information Act (Sections 30-4-10 through 30-4-110 of the *Code of Laws of South Carolina, 1976*, as amended). This act categorizes records as either restricted from or open to the public. Other laws applicable to particular governmental jurisdictions, functions, or records may also require you to restrict certain information.

Your procedures should protect all records from unauthorized access and allow access to open records. They should also ensure that digital images of your records are created only in the normal course of business.

Selection and use of digital imaging records systems

Digital imaging records systems require hardware (equipment) and software (computer programs) to retrieve and translate information into an eye-readable form. Because the digital storage medium is impermanent, you must select a system and operate it in a way that will allow you to retain and retrieve information over time as hardware and software change and the storage mediums deteriorate.

Since few nationally-accepted standards have been set for digital imaging records systems, the Archives' Division of Archives and Records Management offers the following recommendations. These represent generally accepted principles and practices and address issues of concern. In the changing technical environment, they will help you keep your records accesible and your programs in conformity with changing national standards.⁵

Planning for conversion

Before you purchase a digital imaging records system, analyze your records and workflow to evaluate the way you are keeping and using records. If you do this first, you will know what sort of record system will increase your efficiency and effectiveness. You should also conduct cost benefit and risk analyses to justify your purchase. Your cost benefit analysis must include an annual expense of 20 percent of the purchase price for training, upgrades, maintenance, and storage.

System documentation

To maintain an effective operation and continue to retrieve data as your operating environment changes over time, you must keep full documentation of:

- hardware and software, including brand names, version numbers, dates of installation, upgrades, replacments, and conversions.

⁵ This subject is discussed in detail in *The Use of Optical Disks for Public Records* (Association for Information and Image Management. Technical Report for Information and Image Management — *The Use of Optical Disks for Public Records* [ANSI/AIIM TR25-1995] (Silver Spring, MD: AIIM, 1995), and Part 2: Acceptance by Government Agencies [ANSI/AIIM TR31-1993, R1999].





- data structure and content, including the file layout and data dictionaries
- “enhancement” algorithms
- operating procedures, including methods for scanning or entering data; revising, updating, or expunging records; indexing; backing up to disks, tapes, microfilm, etc.; testing the readability of records; applying safeguards to prevent tampering and unauthorized access to protected information; and carrying out the disposition of original records. In addition, you should provide audit trails by documenting procedures for logging and tracking. Full documentation of your operating procedures will contribute to the legal acceptability of your records management program and will help make the data you produce in digital imaging records systems admissible as evidence in legal proceedings.

Hardware and software

- When you are selecting a system, strongly consider those with open rather than proprietary designs; open systems will give you the most flexibility when you are choosing equipment and will support interconnection, the integration of information systems, and information sharing.
- Prepare specifications for hardware and software that will require your vendors to continue to support and maintain their products.
- Establish performance standards, incorporate them into your specifications for hardware and software, and require vendors to support them with a substantial performance bond.
- Select systems that provide enough scanning resolution to produce a high-quality image that is at least as legible as the original record. Validate the quality of the image by testing with actual documents.
- Seek vendors who use standard rather than proprietary compression algorithms and file headers to make migrations of data more certain and reliable. If vendors use proprietary algorithms, they must be able to demonstrate their capacity to bridge to standard compressions and file headers.
- Require vendors to supply programs or provide services to test the readability of your digitally-imaged records periodically.
- Consider systems that will allow you to index or incorporate other retrieval information directly onto both the digital image recording medium and the computer hard disk.

Verification and inspection

Include visual inspection in your operational procedures to verify the completeness and accuracy of the scanning process both in the





initial digitization process to magnetic media and when the image is converted to the records storage medium.

Indexing

Since complete and accurate indexes are essential when information is stored in a medium that is not eye-readable, your system design must include provisions for indexing. To retrieve information in records that will be held for many years, you must develop and document indexes with both today's and tomorrow's users in mind. You must also ensure the accuracy of the index at the time it is created by including an index check in your operational procedures.

Labeling

Label digital media, tapes, and other storage containers with particular care since it is impossible to determine content merely by looking at the storage medium.

Back-up and storage

It is vital to make full, frequent, and regular backups of digital image media and magnetic indexes. Store your security copies in secure facilities, preferably off-site, and follow the manufacturers' specifications when environmental conditions for the storage of the various types of digital image media have not been established by independent bodies like the National Institute of Standards and Technology (NIST). If you transfer images stored on magnetic media to a digital image medium, you should back up both the magnetic media before it is transferred and the digital image medium after its transfer.

Annual sampling

For records with a retention value of ten years or less, it is recommended, and for records with a retention value of more than ten years, it is required, that you annually sample both the working and security copies of the digital records and indexes to make sure the data is still readable. To document this process, you should develop and maintain a written procedure detailing the annual sampling of both the working and security copies of the digital records and indexes as well as a log detailing the results of the sampling and measures taken to correct any problems.

Refreshment, migration, and conversion plans

To preserve the records in an accessible form, prepare an appropriate plan for "refreshing" data and migrating and converting images and corollary indexes to new storage media as needed. When the retention period for records in digital image media exceeds ten years, the Department of Archives and History strongly recommends their maintenance in eye-readable form for additional security.



Risk management

Develop a comprehensive risk or disaster prevention and recovery plan.

**For questions
and comments**

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Public records information leaflet no. 13

- Public information leaflets from the Archives***
- no. 1 *Legal requirements for microfilming public records* (1992)
 - no. 2 *On choosing records for microfilming* (1998 revised)
 - no. 3 *Service bureau or in-house microfilming* (1992)
 - no. 4 *Targeting and certification of microfilm* (1996 revised)
 - no. 5 *Choosing a microfilm camera* (1992)
 - no. 6 *Quality testing of microfilm* (1998 revised)
 - no. 7 *Microfilm and microforms* (1992)
 - no. 8 *Choosing a micrographics service bureau* (1998)
 - no. 9 *Choosing microfilm readers and reader/printers* (1992)
 - no. 10 *Computer assisted retrieval systems* (1992)
 - no. 11 *Microfilm storage* (1992)
 - no. 12 *Preservation microfilming* (1992)
 - no. 13 *Public records stored as digital images: policy statement and recommended practices* (2003 revised)
 - no. 14 *Storing records in the State Records Center* (1993)
 - no. 15 *The deposit of security microfilm* (1993)
 - no. 16 *Disaster preparedness and recovery in state and local government records offices* (1999 revised)
 - no. 17 *How to conduct a records inventory* (1993)
 - no. 18 *How to establish records retention schedules* (1993)
 - no. 19 *Photographic Media: Care and Handling* (2003)
 - no. 20 *Editing and splicing roll microfilm of long-term or archival value* (1994)
 - no. 21 *Managing e-mail* (1998)
 - no. 22 *Standards for microfilm service bureau certification* (1998)
 - no. 23 *Sample e-mail policies* (1998)
 - no. 24 *Storage and handling guidelines for maintenance of electronic records of long-term or enduring value* (1999)
 - no. 25 *Preserving evidence: recommended practices for creating and maintaining legally-admissible records on automated systems* (1999)
 - no. 26 *Managing public records on web sites* (2002)
 - no. 27 *Guidelines for the conversion of digital images to microfilm format* (2003)
 - no. 28 *Time Capsules Old and New* (2003)

* These leaflets are available electronically through our WEB page at www.sc.state.us/scdah/techlflt.htm#leaflets

