

Policy for Electronic Imaging for Political Subdivisions

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1. INTRODUCTION

Information contained in public records must be accessible for administrative, fiscal, legal, and historical purposes. It is the responsibility of the Wyoming State Archives to develop policies that ensure that public records are accessible, protected and preserved for future generations. Records contained within an electronic imaging system need to be identified and controlled in the same manner as any other record as required by W.S. 9-2-410.

The statutory authority for political subdivisions to manage records is contained in W.S. 9-2-401 through 9-2-413 and W.S. 16-4-201. W.S. 9-2-401 defines records as follows: “Public record’ includes the original and all copies for any paper, correspondence, form, book, photograph, photostat, film, microfilm, sound recording, map, drawing or other document, *regardless of physical form or characteristics*, which have been made or received in transacting public business by the state, a political subdivision or an agency of the state.” (Italics added)

The Wyoming Office of the Attorney General has determined that the use of electronic media meets the requirement for record storage if the specific system has the approval of the Director of the Department of State Parks and Cultural Resources.¹ In accordance with this determination, political subdivisions choosing to use an Electronic Document Imaging System (EDIS) for records may do so with prior written approval of the Director of State Parks and Cultural Resources or his/her appointed representative. Procedures for requesting EDIS approval are discussed later in this document.

With increasing frequency, digital technology is being utilized to create, capture and store public records. A digital record can be text in a binary code like ASCII, scan images in a bit-mapped form, sound or video. A digitized record is the product of a computer imaging system that captures a record by scanning or by creating it as binary code translated by the computer into human readable language. Both types of records can then be stored on various media such as magnetic tape, optical disk and CD-ROM.

2. WHEN TO USE EDIS

EDIS uses a scanner to convert paper or microfilm records to digitized, electronic images. Once the images are converted, they can be viewed, verified, assigned an address in the storage medium, and indexed for later retrieval. After indexing, system software tracks and locates images for rapid retrieval. Most EDIS allow for viewing by a number of clients simultaneously.

¹ Office of the Attorney General Memorandum, *Electronic medium questions*, May 30, 1997. p.4

Searching for specific topics is accomplished with relative ease. The information on these types of media can only be read using an imaging system that may require proprietary computer hardware and software. These imaging systems are used to reduce the handling and storage of records on paper or microfilm and to increase accessibility to the information in them. They can be extremely efficient in handling heavily used files accessed by many people at different locations.

However, current industry standards for scanned records have still not reached a common level of general acceptance. Although there are many technical standards that have been issued and are being worked on by various standard organizations such as the Association of Information and Image Management (AIIM), the American National Standards Institute (ANSI), and the International Organization for Standardization (ISO), there is still no consensus or standard on a universal format for reading digital documents that allows them to be accessed on any vendor's imaging system. In addition to the compatibility problem, there is no agreement on the permanence of the media itself. According to various sources, longevity of digital media can range from as little as five years to as long as 200 years. The durability of digital media is compounded by the problems of hardware and software obsolescence. Usually, computer hardware has a life expectancy of five years or less and versions of software change yearly. Improper or inaccurate indexing could result in inaccessibility of recorded images. Documents scanned in images of less than three hundred dots per inch (DPI) may not be of a legible quality. Quality control procedures for verification of scanned images must insure that all images are legible, aligned correctly, completely copied, and sequencing and indexing is verified. Back-up procedures must include off-site storage. Non-online storage media must be properly labeled, stored, and regularly checked for stability. These concerns pose significant problems for the retention of and accessibility to future public records. The following policy exists to reduce the risk of premature disposition of public records, to ensure their long-term accessibility, to retain the ability to make copies, and to preserve them for future generations.

A determination of usage of the records to be placed in EDIS is vitally important in determining whether scanning will be cost effective to an agency. An agency with a large number of requests for documents and/or repeated requests for documents could use EDIS very effectively. A short retention period is also important for use of scanning systems. Usually when records are more than one or two years old, the requirement for frequent access diminishes. An agency which has infrequent record requests and records with long/permanent retention periods may find the systems described in this policy are not cost effective.

3. PERMANENT RECORDS

Records judged to be of permanent value must be quality controlled and may be stored in the office of record or transferred to the State Archives, or microfilmed and destroyed. Since there are no national standards for permanency for the medium on which electronic records are maintained and since that medium is not considered permanent, electronic records are not considered acceptable for permanent record storage. It is recognized that there are constant changes in electronic records technology. If or when standards for permanence of electronic

media become a reality, and the medium is judged permanent, this policy will be reevaluated and appropriate changes will be made. Until that time electronic records appraised as permanent must be converted to paper, microfilm, or another acceptable medium that meets national standards for permanent record retention. All permanent records forwarded to the State Archives must be transferred in an organized manner, properly sequenced, and include an index of all records.

4. NON-PERMANENT RECORDS

Time limited records scanned into an EDIS shall be quality controlled to ensure record integrity. Once the record is quality controlled, the paper record may be disposed of. Electronic records shall have the same retention period as the hardcopy/microfilm retention schedule, if used for daily business activities. Political subdivisions may, by contacting the State Archives, request that new retention schedules for electronic record, be approved.

5. APPROVAL AND REQUESTS FOR APPROVAL

Under authority of W.S. 9-2-413(c) and as Director of the Department of State Parks and Cultural Resources, approval is hereby granted to political subdivisions that may contemplate the use of EDIS, and may be storing records on an electronic media. A request to approve an EDIS or electronic medium for the storage of images or documents should only be submitted if:

- A. The system replaces paper and the hardcopy is being destroyed or returned to the patron.
- B. Microfilm replaces the paper document which is destroyed or returned to the patron.

The director will not approve the use of any electronic medium for the storage of permanent records or information, if the records or copies of the records are not being retained by the agency or in the custody of the State Archives. If the records have been microfilmed and the film meets the State of Wyoming Micrographics Standards, Revised 1997, and a camera negative is stored with the State Archives, an electronic medium may be approved for office use.

Political subdivisions presently using EDIS or initiating the use of EDIS must certify that time limited records retained in electronic format will be retained in a usable format for the entire retention period that has been established for the paper records or hardcopy. If any changes take place or are implemented, recertification of the above practices will be completed within thirty days.

6. NEW INSTALLATIONS OF EDIS

Political subdivisions wishing to initiate use of EDIS based on the criteria listed in Section 5 must submit a written request for approval to the Director, Department of State Parks and Cultural Resources, or his/her appointed representative. The request must include the records that are to be scanned, beginning dates of those documents, if there are plans for backward scanning of records the estimated volume records to be scanned, and the disposition of hardcopy records after scanning is accomplished. After approval and once an agency has purchased an EDIS, the agency must submit to the Department of State Parks and Cultural Resources, State Archives the information listed below in preexisting EDIS requirements.

7. PREEXISTING EDIS REQUIREMENTS

Political subdivisions that are using EDIS at the present time for record that meet the criteria listed Section 5 should continue to do so but must submit to the Department of State Parks and Cultural Resources, State Archives the following information:

- System manufacture and model of both the hardware and software, including the software version.
- Company or vendor system was purchased from, including company representative's name(s) and address.
- Records that are being scanned and beginning dates of those documents.
- Disposition of documents after scanning, indexing and quality control is completed. If the records are permanent, the disposition should include whether the records will be retained in-house or transferred to the State Archives. If transfer is to be accomplished, please provide approximate cubic feet of documents to be shipped, and what the annual transfer volume is expected to be.
- Location of back-up files, paper records and/or microfilm. (This is confidential information and will not be released.)

8. GENERAL GUIDELINES:

A. Digital imaging systems that create, use, maintain, and store the record (original) copy of any public record should meet the following minimum requirements:

1. Label and index any digital record in such a manner as to enable authorized personnel to retrieve, protect, and implement approved dispositions for all records in the system. This labeling and indexing will be in accordance with media manufacturers guidelines.

In the case of the use of hard drives or RAID, paper indexing should be accomplished as an added precaution.

2. Provide a standard interchange format, when required, to permit the exchange of records and information between agencies, departments or personnel that utilize different software and/or hardware.
3. Provide for an approved disposition of the records, including when appropriate, their transfer to the Wyoming State Archives on archival film or paper. Permanent public digitized records that are required to be transferred to the Wyoming State Archives as authorized in the appropriate retention and disposition schedule, are to be transferred either on archival film or paper. If possible, political subdivisions should procure paper meeting American National Standards Institute (ANSI) Z39,48-1992 standard for permanent paper. Paper that is made from cotton or 100% chemically purified wood and have a pH between 7.5 and 10, is considered permanent. Film meeting standards from Wyoming State Archives can be created directly from the digital images by various vendors. The digital image can then be retained for use in the office environment and the film can be stored as a permanent backup copy in the State Archives.
 - a. The output onto film or paper needs to conform to the indexing scheme used by the computer program and needs to be produced in a logical, sequential order. A hard copy index needs to accompany the paper printout or film copy.
 - b. In some cases, the intrinsic value of the original record as determined by the Wyoming State Archives, may require the transfer of the original record to the Wyoming State Archives for permanent retention.
 - c. Disposal of any originals after digitization or of original digital media needs to comply with the requirements in this policy and also with the established retention and disposition schedules that are available from the Records Management Section of the Department of State Parks and Cultural Resources.
4. Rewritable and WORM optical disks, CD-ROM, or other types of digital storage media may be utilized for maintaining public records regardless of their retention periods provided that the above items, and those following, are adhered to:
 - a. Ensure proper documentation procedures and audit controls are established and maintained. This documentation should be in the form of a manual (if in digital form it should be accessible through printout to hard copy) which includes system security, authorized access privileges (read and write), and a record of all rewrites, changes, additions, and deletions to any original record. The latter should be maintained for the life of the record.

5. The Wyoming State Archives will accept digital media containing permanent records for storage only as a security backup copy, not as a permanent archival record.

B. Political subdivisions need to ensure that no information is lost prior to the expiration of stipulated retention periods due to changing technology or deterioration of the storage media by converting such media and taking any other action as required to provide compatibility with existing hardware and software. The migration strategy used for upgrading equipment needs to be documented and include the following:

1. The digital media kept in storage should be sampled a minimum of every year in order to determine if any media degradation has occurred. The sampling method used should be similar to that used for film in section 4 of ANSI/AIIM MS45 Recommended Practice for Inspection of Stored Silver Gelatin Microforms for Evidence of Deterioration. Digital data needs to be recopied as necessary or when tested and there is an indication that data loss has started to occur. It is suggested that agencies periodically recopy the data to the same digital media and/or transfer all digital records for which the retention period has not expired to new media. This will ensure data integrity. The exact timing on migration will depend on the type of media the data is stored on.
2. When systems are upgraded or replaced, the newer system needs to be backward compatible with the existing system or as an alternative, all records for which the retention period has not expired and applicable indexes in the existing system needs to be transferred/converted to the newer system.

C. The following practices need to be followed to provide for each document's accuracy and integrity:

1. A procedural manual should be created which describes how the information is imaged, maintained, retrieved and stored. The system's hardware and software characteristics should be fully documented. The documentation should indicate the type, brand names, and model numbers of all hardware components including recording media which are used in the system together with the dates that specific components were put into or taken out of service. Technical specification sheets provided by vendors will typically provide sufficient detailed information to satisfy documentation requirements. Documentation should also include a description of all systems software and application programs used in document imaging. The software descriptions should indicate version numbers and implementation dates for all software upgrades. If application software was developed on a customized basis, flowcharts, source code, and other developmental documentation should be included.
2. Document scanning, data entry, and quality control procedures should be fully

documented for each optical storage application. Written instructions need to be prepared for operators of all equipment used in document scanning, index data entry, and image inspection. Managers should institute periodic training and routine checks to ensure that the procedures are known and being followed.

3. Access control procedures, such as password protection and privilege authorization, should be fully documented. A list of all users and their access privileges should be maintained and audited regularly. The list should differentiate users who are authorized to record or edit images from those who can only read or retrieve them. If changes are made to documents stored in an imaging system, those changes should be recorded on a list along with the person who performed the change and reasons for doing so.
4. An audit should be performed periodically which includes a review of all informational changes, practices, and system security.
5. Copies made from the system are verified against the original image and can be authenticated by the custodian of the records or the system administrator.
6. There is at least one person designated as the system administrator with responsibility for system operation. This person would be able to give knowledgeable testimony about the system if required in a court of law.
7. The scanned image quality must allow for legible copies of the record to be reproduced as needed. To insure images meet this requirement, scanning **must be** at 200 dots per inch (dpi) or higher. For originals which are of poor quality or have colors which do not scan well, it is recommended that the scan be accomplished in gray scale at a minimum of 200 dpi.
8. The imaging system is periodically checked for meeting all relevant national standards and state laws and policies.
9. If the original paper or microform is kept for legal or backup purposes, these documents should be moved off-site.
10. Controls are necessary to prepare documents for scanning, and information such as date and time, operator ID and batch number should be recorded. End-of-day reports should provide the number of batches and documents scanned, and number of documents committed to storage.
11. Special controls should be in place to monitor incoming fax documents that are automatically indexed and added to a folder without operator intervention. Controls should surround the indexing function to ensure that important fields are double-key entered, constant fields stay filled from one document to another, and illegible documents

are rejected. Database security should prevent unauthorized persons from adding, deleting, modifying or viewing index values, and password and logon security is used to limit application and document access. Be aware that most image systems are secure at the document level only, and not at individual image-pages.

12. Cut, paste and annotate capabilities should be restricted especially with the use of an electronic signature.
13. Network security should prevent unauthorized persons from logging onto the system, and optical platters stored outside the jukebox should be physically secured²
 - a. Backup/security copies need to be maintained in an off site storage facility that meets the manufacturer's environmental recommendations for long-term storage. If no recommendations are provided, then the media should be stored in an area where temperatures are no higher than 65 degrees and the humidity is no higher than 40% with variances no greater than +/- 5 for either.
 - b. As stated above, optical media needs to be inspected at least once each year. Inspections need to include a visual examination of the medium, its housing, and the reading of a statistical sample of the data to identify any loss of information in order to correct the cause of deterioration or data loss if it has occurred before it becomes irretrievably lost.
 - c. Nonproprietary "file headers" and compression ratios need to be used unless the system also provides for image conversion into a nonproprietary file format such as TIFF (Tagged Image File Format) and standard compressions such as CCITT group 3 & 4 when being transferred to another system.

9. QUESTIONS/COMMENTS:

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² Source: New Science Associates

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