Preserving Electronic Records in Northern Maine

Electronic & Voicemail

2008

This guide provides basic electronic record preservation techniques which will assist municipal and County governments in Maine. The ultimate goal is to help ensure that operational and historical records produced by municipalities in rural Maine be preserved accurately and reliably in electronic form for future generations.

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INTRODUCTION

Twenty years ago, the overwhelming majority of municipal records were created (written or typed) in a readable code (standard language) directly onto the medium (paper) on which they were to be communicated and eventually stored. Today, most records are created electronically, and increasingly, they are provided to the recipient electronically. Unlike paper records, electronic content is not dependent on the medium and cannot be read directly by humans.

Records of the past…

This guide was created with the intent to help municipal officials assess their current recordkeeping situation and determine the value of information being stored and the type of technology investment this information justifies. The guide addresses the challenges of preserving electronic information with topics to include: physical storage options, file format options, and digital preservation techniques.

Today and the future.

WHAT IS A RECORD?

A record is defined by the Maine State Archives as:

- **All recorded information, regardless of its physical form or characteristics (paper, microfilm, word processing files, spreadsheets, databases, audio recordings, video recordings, e-mails, paper documents scanned to create image files, etc.);**
- **Made or received in connection with the transaction of official business;**
- **Maintained as evidence of the agency's functions, policies, decisions, procedures, operations and other activities; or because of informational value.**

WHAT IS AN ELECTRONIC RECORD?

A "digital" electronic record is created with electronic (computer) equipment, and can be retrieved and read only by using a combination of computer hardware and software. It retains data in a series of characters in binary code of "on-off" or "one-zero" electronic switches. It may begin with paper or microfilm source documents, converted to digital images; but more and more documents in a 21st Century office are "born" digital – created as computer files in the first place.

Digital records can be stored on personal computers, networked servers, and offline media such as floppy disks, CDs, DVDs, and magnetic tape. A digital file's content, not its format or storage location, determines its status – record or non-record – and its retention period. Whether it's an e-mail message, a word processing document, spreadsheet, database, PowerPoint presentation, image file (TIFF, JPEG, GIF, etc.), Geographic Information System layer, or anything else digital, it's an official record if created or received in the course of business.

An "analog" electronic record's format is based on a system which stores and retrieves information in a manner analogous to its original form. Examples: phonograph records, audio and videotapes other than the latest digital tapes, non-digital photograph, phonograph recording.

ELECTRONIC RECORDS MANAGEMENT (ERM) OVERVIEW

Electronic Records Management is the electronic management of paper and electronic records. All organizations should keep both types of records. Handling electronic records the same as paper records will ensure a complete and thorough record keeping system.

There are four drivers in Electronic Records Management:

Compliance

The State of Maine has laws defining what types of records a municipality must retain and for how long. These laws apply to electronic records the same as if they were paper records. Digital records must remain accessible and must be in a format "that can be demonstrated to replicate accurately the information as originally generated, stored, sent or received." [16 MRSA 456-A, 4, A]
More information is provided by the Records Management Services Division at the Maine State Archives.
http://www.maine.gov/sos/arc/records/homepage.html

Effectiveness

An ERM plan is only as good as it is effective. It is important that records can be found easily and do not get lost. Quick and easy information retrieval with access available 24 hours a day, 7 days a week will result in an effective, reliable ERM system.

Efficiency

Duplicate records and poor naming and filing of electronic records can cost time and money. An efficient and well planned ERM plan will ensure records can be accessed quickly, reduce costs of time, and save space.

Continuity

Being able to recover records after a disaster is vitally important to any office, especially municipal government. Vital records are those records necessary to recreate an agency's legal and/or financial position and to preserve the rights of that agency, its employees and the general public. In most cases, paper and physical records are vulnerable to loss. Electronic storage provides solutions for permanent records preservation and easy recovery of information after a disaster.

TYPES OF DATA

Unstructured Data	Structured Data
People use unstructured data every day. Although they may not be aware, they use it for creating, storing and retrieving reports, e-mails, spreadsheets and other types of documents. **Typically, ERM focuses on 'unstructured' records.** Unstructured data consists of two basic categories: 1. **Bitmap Objects:** Inherently non-language based, such as image, video or audio files. 2. **Textual Objects:** Based on a written or printed language, such as Microsoft Word documents, e-mails or Microsoft Excel spreadsheets.	Structured data is usually generated by computer applications and systems — not people. It is managed by technology (relational database) that allows for querying and reporting against predetermined data types and understood relationships. For example, accounting or payroll records are almost never stored in an ERM system; they are stored in or managed by specialist applications sometimes called back-office applications or legacy applications.

Formats of Record (Unstructured)

Examples of Electronic: (digital)	
Internet Explorer Website	Adobe Illustrator Design
Microsoft Word Document	Adobe Photoshop Graphic
Microsoft Access Report	Adobe PDF Document
Microsoft Powerpoint Presentation	Windows Media
Microsoft Excel Spreadsheet	QuickTime
Microsoft Outlook Email	ArcGIS
Microsoft Publisher	QuarkXpress Design

Examples of Physical: (analog)		
Handwritten letters	Microfilm/Microfiche	Video/Film
Compact Disc/DVD	Maps	Phonograph Recordings

Types of Record (Unstructured)

Some Examples:

Letter	Fax	Memorandum	File Note
Telephone Message	Invoice	Plan	Order
Form	Report	E-Mail Message	Surveillance Recording
Voice Message	Instant Message	Telephone Conversation	Publication
X-Ray	Chart	Photograph	Slide

What Information Is A Record?

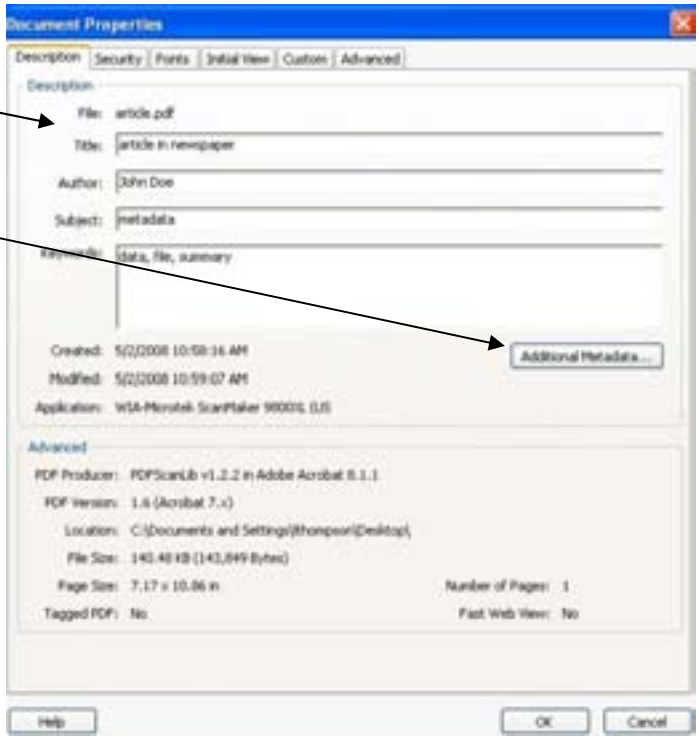
In theory, the more significant it is, the more likely it is a record.

Records	Non-Records
Outgoing Letters – Emails	Press Cuttings
All Contracts	Trade/Industry Publications
All Financial Documents	Meeting Arrangements*
Policies & Procedures	Travel Arrangements*
Audit Trails and Logs	Invitations*
Meeting Minutes	* **For some employees whose jobs require setting up meetings, travel, etc. as a regular function, these could be records.**
Formal Reports	
Some of these listed below may be a Record or Non-Record depending on the significance or relevance to the office.	
Significant Memoranda	Trivial Memoranda
Some Internal Email (depending on content)	Some Drafts

METADATA

Metadata is information about the record. It can be created by software or humans and can be electronic or paper-based. For a document or record, this means data such as author, title, issue date, and any other information which can usefully be associated with the record. An ERM system will hold metadata about items in its repository in two main categories:

1. Essential (mandatory) – to identify and manage the item.
2. Optional – to provide additional information about the item.



Metadata is essential to future data retrieval, reading and interpretation of archival records. Creation, retention, and retrieval of metadata on the provenance of a digital record must be designed into the software applications that create, store, and retrieve the record or into an integrated record keeping system. All offices should develop policy and guidelines for capturing metadata.

DEVELOPING AN ERM SYSTEM

To have a successful ERM system, electronic records should be identified, distinguished as public or non-public, and appropriate metadata applied at "creation". Try to make sure the system you develop is non-proprietary, meaning that it is not protected by trademark or patent or copyright; non-proprietary products are in the public domain and anyone can produce or distribute them.

**** Important Note - Do not develop an ERM system on a user computer. Make sure all electronic records are stored on a LAN (Local Area Network) or dedicated server which maintains off-site backups.**

The first steps in developing an ERM System are:
1. Identification
2. Classification
3. File Naming

Identification

The first step is to conduct an analysis of departments' and agencies' business functions to:

1. Identify important functions,
2. Identify the important records created by transactions within these functions, and
3. Appraise and schedule the records.

While the complexity of such an analysis will vary from situation to situation, these three components should always be included:

1. ***Value of Information*** – The value of information will justify your investment in technology, over the short and long-term. Some records have more value than others and legally must be retained for a certain length of time.

2. ***Retention Schedule*** - Establish a retention schedule system by date so you know how long you are required to keep certain records. For a complete listing of Maine's retention schedules, refer to the Records Management Services Division at the Maine State Archives. http://www.maine.gov/sos/arc/records/homepage.html Remember: Content, not format, determines retention.

**** Important note: These schedules regulate government records only. The records of private entities and nonprofits are not subject to the Archives and Records Management Law.**

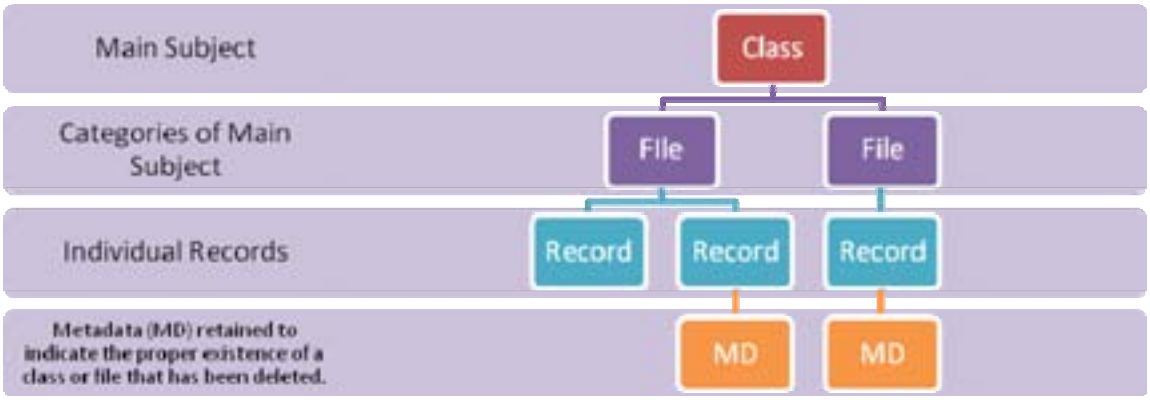
3. ***Access Restriction***- According to statute, some records may be restricted as confidential or non-public. If it is restricted, you need to make sure that your long-term storage and access policies account for those obligations.

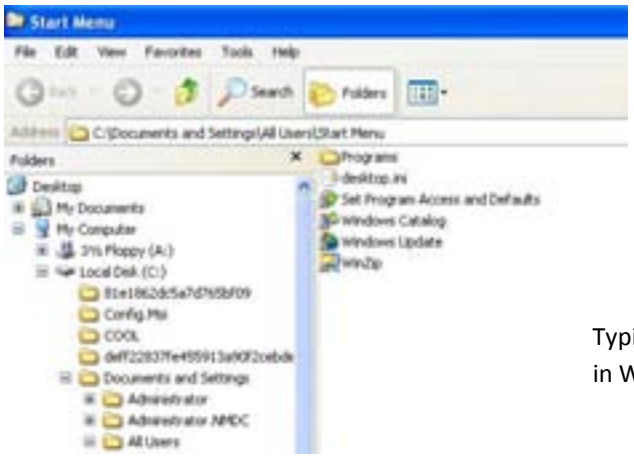
Classification – aka Record Series

Classification, in simple terms, is grouping information together.

Benefits of classifying records include:
1. Provides linkages between individual records which accumulate to provide a continuous record of activity.
2. Ensures records are named in a consistent manner over time.
3. Assists in the retrieval of all records relating to a particular function or activity.
4. Determines security protection and access appropriate for sets of records.
5. Allocating user permission for access to, or action on, particular groups of records.
6. Determining appropriate retention periods and disposition actions for records.

A classification scheme is the structure for organizing, accessing, retrieving, storing and managing information. Many office computers use a hierarchical/tree structure but other structures can be developed depending on specific needs. A hierarchical structure may look like the following:





Typical hierarchical structure in Windows applications.

File Naming

A file name is the chief identifier for a record. In the world of electronic records, the record's file name provides metadata that places the record in context with other records, records series, and records retention schedules. In most organizations, the policy for naming a file (and hence a record) is left to individuals or to groups of individuals (e.g., departments, committees). Consider establishing an agency-wide file naming policy that complements your electronic records management strategy.

Consistently named records foster collaboration based on mutual understanding of how to name files and use file names. Consistently named records also help you to meet your legal requirements. Legally, your records must be trustworthy, complete, accessible, legally admissible in court, and durable for as long as your approved records retention schedules require.

Tips on Developing File Names

- **Determine What Metadata to Collect** - You will need to decide what metadata to collect and include in file names. Collection and use of metadata in file names will help ensure the long-term usefulness of your records and help you to meet legal requirements for accessibility (for public records) and accountability, as well as protect not-public records.

- **Universal Retrieval** - Ensure that the staff and the public (as appropriate) can access your files. Legally, public records must be accessible. Standard file names allow users to find records efficiently.

- **Determine the Official Copy** - Determine which file is the "official" copy. Including an indicator of official record status in a file name may be useful for this purpose. The inclusion of this parameter in your policy will help you meet your legal requirements to capture records as set forth by the Official Records Act. The inclusion of this designation may also make administration of your web site records easier.

- **Determine File Naming Boundaries** - Pay close attention to the freedom you give staff members (and outside vendors) in naming files. Provide guidelines and training on file naming. You will not be able to manage every electronic record's file name, so you will need to rely on staff members and vendors to name files in compliance with your policy. By providing guidelines and training, you can maximize policy compliance in a way that meets your operational and legal requirements.

- **Relationship To and Connection With Paper Records** - Determine how the names of your electronic records relate to the names of paper files you have stored. Because electronic records may be part of records series that include paper records, the file naming policy for electronic records should fit logically with your paper records naming. For example, a letter published on a web site might be part of a records series that includes additional paper documents in a file folder. By ensuring that the electronic records' and the paper records' file names mesh, you can more easily manage the records series.

General Challenges in File Naming

- **Version Control** - You will need to determine how and whether to indicate the version of the record. Some organizations put current and obsolete drafts in different electronic file folders without altering the file name. However, when these records are moved from the active electronic file folder to another storage area, identical file names may conflict and cause confusion.

- **Uniqueness** - To avoid file names conflicting when they are moved from one location to another, each record's file name should be unique and independent from its location. For example, if letters are simply named with the word letter and the date, they are not independent from location because they could fit into any records series that contains letters, and all letters sent on that date would have the same file name.

- **Persistence Over Time** - File names should outlast the records creator who originally named the file. With good stakeholder and staff input, and training, you should be able to develop file names that make sense to staff members once the file creators are no longer available.

- **Access and Ease of Use** -The policy should be simple and straightforward. A simple policy will help staff members logically and easily name records and help ensure that records are accessible to staff members and/or to the public. A simple policy will be more consistently used, resulting in records that are consistently named, and thus easier to organize and access.

- **Ease of Administration** - The policy should work with your computer infrastructure, so that you can monitor policy compliance, manage records and records series, gather metadata, and perform other administrative tasks easily and in compliance with all legal requirements. For example, if all the records in a specific records series are easily identifiable by file name, they will be easier to gather and manage.

- **Scalability** - Consider how scalable your file naming policy needs to be. For example, if you want to include the project number, don't limit your project numbers to two digits, or you can only have ninety-nine projects.

ELECTRONIC RECORDS PRESERVATION

Definition: The process of ensuring that a digital object is accessible over the long term.

The preservation of electronic records has created huge challenges for archivists and requires constant vigilance. **Digital preservation does not just happen – it must be actively pursued.** New research is constantly being completed to develop the most efficient ways to handle electronic records into the future.

The following issues exist when considering the archival of electronic records:
1. File Format
2. Media
3. Hardware & Software Obsolescence

File Format

A file format is a particular way to encode information for storage in a computer file. Most records are created using a certain brand of software, such as Microsoft or Adobe. Over time, these software packages will be upgraded or possibly phased out altogether.

**** Important Note: It is best to assume that upgraded versions of software may or may not be able to read files created with previous versions; therefore you should not rely on backwards compatibility as a preservation tool.**

Proprietary format – Controlled and supported by just one software developer.			
doc	Microsoft Word	wpd	Word Perfect Document
dwd	AutoCad Drawing	ppt	Microsoft Powerpoint
psd	Adobe Photoshop	xls	Microsoft Excel

Non-proprietary format – Supported by more than one developer and can be accessed with different software systems.			
txt	Unformatted text	xml	May be a preferred format for textual content, metadata records
html	Dominate markup language for web pages	png	Rastor image format
odf	Open document format	svg	Vector image format

Open document format - The most common filename extensions used for OpenDocument documents are:
odt for word processing (text) documents
ods for spreadsheets
odp for presentations
odg for graphics
odf for formulae, mathematical equations

File Format Types

Type	Common Formats	Sample Files	Description
Text	**Proprietary to software program (e.g., Microsoft Word) DOC, WPD, RTF**	**Letters, reports, memos, e-mail, messages saved as text**	**Text is not always "text". Word processing applications do not create text documents – they create binary files.**
Data file	**Proprietary to software program, MDB**	**Human resource files, mailing lists**	**Created in database software programs**
Spreadsheet	**Proprietary to software program, XLS**	**Financial analysis, statistical calculations**	**Store numerical values and calculations**
Raster Graphic (Bitmap)	**JPEG, BMP, TIFF, GIF**	**photos, illustrations, web page graphics**	**Dots (or bits) of color in a pattern. Cannot be scaled without distortion.**
Vector Graphic	**CAD, GIS, EPS, DXF**	**Architectural plans, shape files, complex illustrations**	**Mathematical formulae that produce shapes for undistorted scaling**
Video & Audio	**QuickTime, MPEG**	**Short video to be shown on a website, recorded interview to be shared on CD-ROM**	**Contain moving images and sound**
Markup Languages	**HTML, XML, SGML**	**Text and graphics to be displayed on a website**	**Contain embedded instructions for displaying and understanding the content of a file or multiple files**

Media

All storage media have finite life spans which are dependent on a number of factors, including manufacturing quality, age and condition before recording, handling and maintenance, frequency of access, and storage conditions.

Brand name media have made the extra effort to produce higher quality materials that will last. You may pay a bit more but it will be the most stable. Do not use any media over and over again.

Tips to Maintain Media

- Handle by housing or edges
- Don't bend or place objects on top
- Use duplicate copies for viewing and keep an original in a safe spot
- Don't use paperclips or rubber bands
- Create clear, detailed descriptions
- On CD & DVD, avoid using labels if possible. Over time, the adhesive on the label will destroy the data.
- Write on the plastic inner circle instead of directly on the CD or DVD. Over time, ink will destroy the data and shorten the lifespan of the disk.
- DVD's have larger storage capacity but are susceptible to loss. DVD's have multiple layers glued together. Over time, the layers can separate and fall apart.
- If using optical media, use backups and keep in a separate storage area.

Media Performance Issues

- **Speed of Access** - Consider how quickly you or authorized members of the public may need to access your records. You may find that some types of records require fast access, while others do not. For example, you may need fast access to key policy decisions, but not to employee records.

- **Capacity** - The volume of records that you can store on the medium will be a key consideration. Examine the volume of the records you now store, and try to determine what your needs may be in the future. Consider the official definition of a record and whether that definition will affect the records volume that you need to manage. For example, you may anticipate greater use of electronic correspondence sent from one user to one or more recipients.

- **Longevity** - Research how long the industry will support various media options and compare those figures with the time period that you need to keep your records according to the approved records retention schedule. You may find a medium that meets all your needs, but is not widely used or has a high risk of becoming obsolete, thereby limiting its usefulness in the future.

- **Durability** - Research how easily a given medium can be damaged or will deteriorate. You may find that a medium that deteriorates after three years will still be a suitable option for records that need to be retained for only one year. Be sure to review your records retention periods.

- **Versatility** - If your records contain multiple file formats, research how many file formats a medium can store. For example, a floppy disk cannot store large graphics files, but a CD or a DVD can store graphics, text, audio files, or video files.

- **Portability** - Determine how portable your stored records should be. Some media, such as DVD-ROMs, are very portable, while hard disks in a computer processor are not. You should also consider whether you will need special devices to read the records. Consider who will be accessing your records. For example, will the public, the press, or other agencies frequently access your records?

- **Compatibility** - Assess the backward and forward compatibility of the digital media you are considering. For example, DVD-ROM drives are backward-compatible for CD-ROMs, but a CD-ROM drive is not forward-compatible for DVD-ROMs. This discussion will help you to determine how often you may need to upgrade supporting computer systems, migrate records, and/or convert records.

- **Cost** - Assess the costs and benefits of each medium you consider. Be sure to discuss the costs of converting and/or migrating records, as well as the basic costs of the system.

Optical Media
Compact Disk (CD) – Compact Disks come in a variety of formats including: • CD-ROM – Read Only • CD-R – Write to once and then read only • CD-RW – Write to in multiple sessions
Write-Once, Read-Many (WORM) Disk – WORM disks require a specific WORM disk drive to enable the user to write or read the disk. WORM disks function the same as CD-R disks.
Erasable Optical (EO) Disk – The user can write to, read from, and erase from EO disks as often as they can magnetic disks. EO disks require special hardware.
Digital Versatile Disk (DVD) - These disks are also called digital video disks, but do not necessarily include video. DVDs can hold between 4.7 GB and 17.0 GB of data. Common types of DVDs include: • DVD video - Show full-length films using a special DVD player connected to a television set. DVD videos contain a scrambling system that prevents users from copying the contents. • DVD-ROM - Read-only disks that also have enough storage capacity for a full-length feature film. They are accessed using a special DVD drive attached to a personal computer. • DVD-RAM - Rewritable disks with exceptional storage capacity of up to 2.6 GB per side, and come in one- or two-sided formats.

Blue-Ray (BR) – The Blue-ray's main uses are high-definition (HD) video and data storage. The disc has the same dimensions as a standard DVD or CD. A dual layer Blu-ray disc can store 50 GB, almost six times the capacity of a dual layer DVD. Blue-ray has become the leader in HD and will be widely used in the years to come.

Optical Cards - Optical cards, also known as "smart cards," are the size of a credit card. They come in read-only and read-write formats. They are not in widespread use except for limited applications, such as automatic teller machines, personal identification for security systems, and airline reservations.

Optical Tape - Optical tape is tape coated with optical recording material. Optical tape is not widely used.

Magnetic Media

Magnetic Disk – Includes the hard disk found in your computer that stores the programs and files you work with daily. Magnetic disks provide random access.

- **Removable hard disk** – These disks are encased in a plastic housing that allows them to be inserted and removed from a processor.
- **Removable disk** – Removable disks include the relatively small-capacity floppy disks, as well as the larger-capacity peripheral disks, such as the Iomega Zip disks.
- **Cartridge** – Removable cartridges contain disks encased in a metal or plastic casing for easy insertion and removal.

Magnetic Tape - Magnetic tapes come in reel-to-reel, as well as cartridge format (encased in a housing for ease of use). The two main advantages of magnetic tapes are their relatively low cost and their large storage capacities (up to several gigabytes). Magnetic tapes provide sequential access to stored information, which is slower than the random access of magnetic disks. Magnetic tapes are a common choice for long-term storage or the transport of large volumes of information.

Digital Audio Tape (DAT) - DATs are in a cartridge format a little larger than a credit card. The industry standard for DAT cartridge format is a digital data storage (DDS) cartridge. DDS cartridges provide sequential access.

Videotape - Videotape provides sequential access to video footage (e.g., feature films).

Hardware & Software Obsolescence

Although loss of data associated with deterioration of storage media is an important consideration, the main issue is that software and hardware technology becomes rapidly obsolescent. Storage media becomes obsolete as do devices capable of reading such media; and old formats and standards give way to newer formats and standards. This situation holds true for electronic records derived through conversion from some analog form (paper, film, video, sound etc.), and for records that originated in electronic form.

Most records are created using specific, proprietary software applications. Over time, these applications will be upgraded or be phased out altogether. Because upgraded applications may or may not be able to read files created with previous versions, backward compatibility is not a given and cannot be counted on as a preservation tool. Maintaining the software on your own is an option, but over and above the question of costs, that carries the risk the software will fail in time, leaving you with no way to access your records. One common alternative is continually to convert your files from version to version and format to format as your software environment changes.

Older computer system which will soon be obsolete.

Long Term Preservation Formats

****Important to Remember – Once you decide on a format or a certain process to preserve your digital records, stick with it. Uniformity is a must!**

While non-proprietary formats are the ideal for the long-term preservation of files, they are few in number and each has its limitations.

The following are common formats used for long term preservation:
ASCII or **plain text** - Will capture data in the lowest common denominator of formats, losing structure and functions in the process.
Rich Text Format (RTF) - Microsoft format, although it is supported by a variety of vendors and software applications.
Portable Document Format (PDF) - Popular choice for file sharing and storage, is an Adobe product. Because Adobe makes PDF's specifications publicly available, many believe that it is an open standard when, in fact, the company is under no obligation to continue this practice into the future. Furthermore, PDF has a problem with backward compatibility, with newer versions often incorrectly rendering files created with older ones.
PDF/A - Electronic document file format used for long term preservation. The PDF/A format archives documents by embedding all the pieces necessary for faithful reproduction (such as fonts) while forbidding other elements (including encryption). It is an ISO standard established in 2005 for long-term preservation of documents.

eXtensible Markup Language (XML) - Currently the optimum choice of formats. An international standard since 1998, XML is both a file format and a text-based, self-describing, human-readable markup language that is independent of hardware and operating systems. Because it is infrastructure-independent, XML is one of the best solutions for re-purposing the content of your records and/or sharing them with others. Proper use of XML requires a certain amount of planning and up-front commitment of money and time, but its structured nature makes it suitable for automation and will allow you to more easily take advantage of whatever new open formats will follow in the future.

Tagged Image File Format (TIFF) – Used for storing images, including photographs, scans and line art. The ability to store image data in a lossless format (will not lose quality) makes TIFF files a useful method for archiving images. Unlike standard JPEG, TIFF files using lossless compression (or no compression at all) can be edited and resaved without suffering a compression loss.

Long Term Preservation Techniques

There are several approaches, some more practical than others, to ensure that electronic records remain useful over time.

- **"Computer Museum"** - Save all of the hardware, software, and documentation needed to support the records. It is not very realistic on a large scale because, given how rapidly hardware and software environments change, it means storing and maintaining huge quantities of outdated equipment with no assurance that any of it will work when needed.

- **Emulation** - Emulator programs simulate the behavior, look, and feel of other programs, thus preserving the functionality of the records in their original format without the necessity of saving the original equipment and software. Emulation simply reproduces earlier, less sophisticated versions of an application. Given all the expenses of technology, it seems problematic to limit the value of information by preserving it in a static framework.

- **Encapsulation** - Involves combining the object to be preserved with all of the necessary details of how to interpret it within a wrapper or package, all possibly formatted in XML. While appealing in its comprehensiveness, encapsulation has several drawbacks: file sizes are large because of all of the included information; format specifications must be determined; the encapsulated records must somehow be generated, usually separate from the act of record creation; and the encapsulated records must still be migrated over time.

- **Migration & Conversion** - The process of moving files to new media (also known as "refreshing") or computer platforms in order to maintain their value. This remains as a common solution but can be time-consuming and expensive. Conversion entails changing files from one format to another and may involve moving from a proprietary format, such as Microsoft Word, to a non-proprietary one such as a plain text file or XML. To avoid losing data in the process, you should perform initial tests and analysis to determine exactly what changes will occur and whether they are acceptable. With both migration and conversion, special attention must be paid to also maintaining the accessibility of any associated metadata. When properly planned and executed, the migration and conversion approach probably represents the easiest and most cost-effective preservation method available today.

Questions to Get Started on an Electronic Records Preservation Plan

1. What are our goals for preserving electronic records? What is the desired end product? A document management system? A searchable online collection?

2. What types of records do we need to store (e.g., graphics, text, database text)? What file formats? How large are our record files? How much space do we need?

3. How often are these records accessed? What is the best storage solution?

4. How long do we need to keep these records? What will be the costs associated with such preservation tasks as migration and conversion over time?

5. Who will use the file naming policy to name files? What policy will make sense to each group?

6. Will the records move location? (e.g., from one server to another, from a server to long-term storage)? How will these changes affect file naming?

7. How does file type affect file name? Does our software or computer system limit the number of digits in the file name?

8. What types of materials will be digitized? Textual documents? Photographs? Maps?

9. What hardware and software configurations are we moving to in the foreseeable future? How do these records fit in with that plan?

10. How should e-mail records be organized for long-term storage and access? How will we retrieve and dispose of e-mail on our chosen storage media?

11. Which e-mail messages are records? What elements of an e-mail record do we need for a complete understanding of the transaction?

12. What is the most appropriate storage media for the records? How will we ensure that we retain the hardware necessary to handle the media? What documentation should we collect and maintain regarding the media and hardware?

13. How well do our current media meet our needs? What costs would be incurred for supplies, equipment, and training that would be required if we were to switch to or add a new storage medium?

14. Are any of the media we are considering expected to become obsolete in the near future? Will the medium, as well as the necessary hardware and software, still be available from a number of suppliers for as long as we need? Has the developer defined a migration path for improved versions of the medium?

15. What best practices can we identify and apply to our situation? Can we cooperate with other agencies or organizations to share expertise or save money?

16. Do we need to keep the records in electronic format or is another format, such as paper or microfilm, more appropriate? How much functionality do we need to retain over time?

17. What legal issues do we face? Who will need access to our records (e.g. the public, other government agencies)? Do we have information that must be accessible to the public? Do we have information that must not be disclosed to the public?

18. How will we ensure that the content of the records is accessible and readable over time? Is the format and necessary software proprietary or non-proprietary? What documentation should we collect and maintain regarding format and software?

19. How will we perform periodic quality assurance checks to ensure accessibility and trustworthiness over time? How will we document these checks?

20. How will these records be used? Will they be shared with others inside our organization? Outside? Would XML enhance the use-value of the records?

21. Have the records been compressed or encrypted? If so, how does this fit into our management plan?

22. Are there data access issues that require special security measures?

23. What staff training is necessary to ensure compliance with the preservation plan?

24. How should we implement the procedures of the plan technically and operationally? How can we plan our implementation so the policy is widely used and accepted, but causes minimal disruption to our daily operation?

LIST OF RESOURCES

AIIM, Online ERM Practitioner Training Course. http://www.aiim.org/education/erm2.asp

Juhnke, Deborah H. "Electronic Discovery in 2010." The Information Management Journal Nov.-Dec. 2003: 34-42.

Maine State Archives, Division of Records Management Services. *Guidelines for Your Records Management Program*, September 2006. http://www.maine.gov/sos/arc/

Maine State Archives, *Maine State Archives Digital Records Management Plan 1999-2003,* Lars H. Rydell. Revised and edited by James Henderson, April, 1999. http://www.maine.gov/sos/arc/localrec/localhom.html

Maine State Government, *Electronic and Voice Mail 2.0 – A Management Guide for Maine State Government.* http://www.maine.gov/sos/arc/general/admin/email.htm

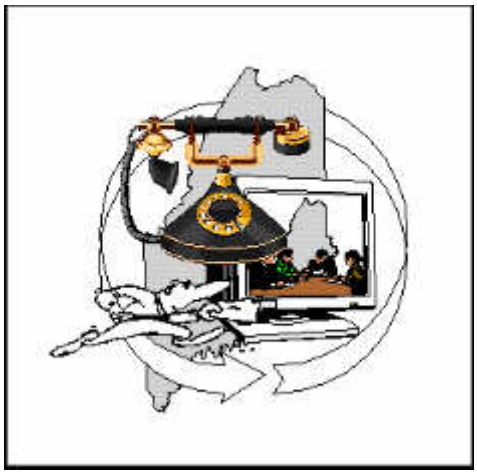
Minnesota Historical Society, State Archives Department. *Electronic Records Management Guidelines Version 4*, March 2004. http://www.mnhs.org/preserve/records/electronicrecords.htm

Montana, John C. "E-Mail, Voice Mail, and Instant Messaging: A Legal Perspective." The Information Management Journal Jan.-Feb. 2004: 37-41.

Society of American Archivists, Basic Electronic Records. http://www.archivists.org/

Electronic and Voice Mail 2.0

A Management Guide for Maine State Government



This document provides guidance to agencies regarding the record status of, and management approaches to e-mail in Maine state government. It outlines legal requirements, types of records, and practical management options.

The transition from binding retention schedules adopted by the Archives to effective records management in the office is difficult enough with paper. In the electronic world, the challenge is often greater. This Guide is intended to ease that transition from formal mandate to practical application.

What is E-Mail?

E-mail is just another form that state records come in these days: paper, microform, photographic, audio/video tapes, motion picture film, and, yes, computer files. Formally, it is a document created or received on an **electronic mail system** including brief notes, more formal or substantive narrative documents, and any attachments, such as word processing and other electronic documents, which may be transmitted with the message.

E-mail received or created (incoming or outgoing) in the course of state business is an official **public record**. Depending on the topic, it may or may not be a confidential record under the Freedom of Access Act (FOAA). In any event, since no official public records may be destroyed unless authorized, clear authorization and a practical management system are essential to insure the proper disposition of official e-mail records. Some e-mail (personal messages, junk mail, publications) are not records and may be deleted at any time.

How Long Should I Keep E-mail?

Just as long as you would keep any other mail! E-mail is subject to the same retention requirements as is paper correspondence. The Archives' General Schedule (covering records in all agencies) establishes retention periods for correspondence, regardless of media.

While destruction is strongly recommended at the end of the retention period, each agency may determine when actual destruction is appropriate after the expiration of the retention period. These policies are no different from what has been in place for years. What is new is our attempt to properly manage one segment of the new electronic records environment.

Non-permanent retention is based completely on the record's time-value to the business functions of the agency, including audit or other statutory requirements, and reasonable access by interested parties. Permanent retention is based on the record's value after it no longer serves the agency's business.

Generally, senior administrators through the division director level have a greater proportion of permanently valuable e-mail, given its greater degree of policy content. The vast majority of state employees will have little, if any, e-mail requiring permanent retention.

Why Should I Care How Long I Keep It?

To make your life easier!

If you can delete unneeded e-mail with a clear conscience, you can more easily find what you're looking for, especially if you have popped the keepers in convenient folders or mailboxes.

Organizing and managing e-mail (and other files) will save space, provide more efficient access, maintain confidentiality where needed, reduce legal exposure in "discovery" proceedings on records that properly should have been destroyed.

It also limits your own liability for deleting records you shouldn't, and gives you authority to delete those files you should delete. NOTE: When an employee leaves a position, computer files, including e-mail, may NOT be automatically deleted!

Since deletion must follow the applicable retention schedules, proper management of files will make this task easier. (Be sure the user's password - for local files as well as network access - is deposited and updated with your systems administrator or other designated person.)

Not all e-mail systems provide automatic backup of your correspondence. Those that do are not substitutes for the user's file management, since backups are destroyed periodically and they do not distinguish topics or retention periods.

What About Voice Mail?

In a sense, voice mail (including answering machine messages) is a type of e-mail. In this case, the electronic system produces the messages in an audible, rather than in a visual, form.

Overwhelmingly, voice mail messages meet the test of **non-record material** and may be legally deleted at will.

However, keep in mind the possibility that special circumstances may apply requiring some limited retention. Some examples include the following: potential evidence in legal proceedings (bomb threats, reports of illegal activities); customer complaints about agency policy or service; oral authority by a supervisor to take certain action, with no written back-up, which may be important to retain.

Any uncertainties should be reviewed with supervisors, Records Management Services staff, or other appropriate authorities. In most cases, certified transcription to a readable format would allow deletion of the voice message. These are, of course, very special circumstances, mentioned here only to alert you to their possible occurrence.

O.K. What Do I Do?

Follow the advice in the rest of this Guide. Then, if you have any questions about the retention requirements of specific records, contact the Archives' Records Management Services Division at 287-5798 for help.

Basically, it's pretty simple. The easiest way to manage the retention and deletion of e-mail is to separate it as much as possible by broad category, by topic and then by year. When the witching hour arrives, simply delete the mailbox or folder containing the outdated records. You can have as many subdivisions as suits your workstyle, but at least separate the major categories and attach a year to them.

As outlined below, first figure out what in your e-mail are non-record materials; create special mailboxes for them; then delete them any time you want.

Second, identify how long you should keep non-permanent records. Finally, identify those records that should be retained permanently; when they are due to go to the Archives, follow the recommended guidelines.

Non-Record Materials – Delete at Will!

The following are materials (not records) that may be deleted at any time, unless they become part of some official record as a result of special circumstances.

Personal Correspondence

Any e-mail not received or created in the course of state business, may be deleted immediately, since it is not an official record: the "Let's do lunch" (not a State-business lunch) or "Can I catch a ride home" type of note.

Notices Not Maintained

Since a document must be maintained by, or in the custody of, an agency to be an official record, notices with no business value after receipt and review, which are routinely discarded, are non-record material. These include the following:

- incoming transmittal messages (like cover letters): "enclosed (attached) find copies of . . ."
- internal office announcements: "Ms. Jones is here to see you, boss", "Joe Smith called, please call back", "Is this afternoon's meeting still on?"

Publications

Publications, promotional material from vendors, and similar materials that are "publicly available" to anyone, are not official records unless specifically incorporated into other official records. In the electronic world, this includes listserve messages (other than those you post in your official capacity), unsolicited promotional material ("spam"), files copied or downloaded from Internet sites, etc.

These items may be immediately deleted, or maintained in a "Non-Record" mail box and deleted later, just as you might trash the unwanted publication or promotional flyer.

However, if you justify the purchase of a Zippo Filing System by incorporating the reviews you saved (from the File Manager Listserve) in your proposal to your boss, those listserve messages become official records and must be retained in accordance with the retention schedule for purchasing proposals.

Nevertheless, the vast majority of items one stores in the 'Non-record" mailbox never become official records and may be destroyed at will.

Official Records – Retain as Required

Non-Permanent Retention

Short-Term Retention - Retain for 60 days, then Delete

This transitory correspondence, while part of state government business, is purely informational with a very short time value, and includes the following:

Employee Activities

- notices of employee activities: holiday parties, softball games, etc.
- invitations and responses to invitations to work-related events

Routine Business Activities

- thank-you's: "thanks for the copy of ..."
- requests for information from the public
- outgoing transmittal messages (like cover letters): "enclosed (attached) find copies of . . ."
- replies to questions: "we're open 8 to 5", "our address is . . .", "the deadline is . . "

Intermediate Retention - Retain According to Schedule

These records are specified either in the "General Schedule" for all agencies, or the agency's specific retention schedules.

If they are not clearly specified, consult your agency Records Officer for clarification; obtain further guidance from the State Archives' Records Management Services Division: 287-5798 or Barry.Marshall@maine.gov.

Permanent Retention

Retain until Archival Copies are Made

E-mail documenting state policy or the policy process is a prime candidate for permanent retention. Check your official retention schedules or contact the Archives' Records Management Services Division.

Records with permanent value include but are not limited to the following: 1) documentation of state policy (laws, rules, court decisions), 2) documentation of the policy process (minutes of meetings, transcripts of selected hearings), 3) protection of vital public information (births, deaths, marriages; corporate charters; critical environmental data and reports).

An E-Mail Management System

Mailboxes

In addition to the IN and OUT boxes which come with your mail system, you have the option of creating other "mailboxes" or "folders". After brief periods in your IN-OUT boxes, messages should be transferred to other boxes, based on business and retention requirements. Here are some mailbox suggestions:

- Personal E-Mail [Delete at will]
- Non-Record Material [Delete at will]
- Transitory E-Mail [Delete after 60 days]
- Intermediate E-Mail [Delete by schedule]
- Permanent E-Mail [Delete only when permanent copy is made]

Distribution Lists

If you send to a "distribution list" (not a listserve, but a specified list of individuals), you must also keep a copy of the members of that list for as long as you are required to keep the message itself. It is of little value to know that the "Security Alert!" notice went to "Swat Team 7", without knowing whether Arnold S. received the message. Nicknames present a similar problem.

Subject Lines

Fill in the Subject line on your e-mail both to help your recipient identify and file messages, and to help you file your OUT box messages that must be retained for some period.

Frequently Asked Questions….. About E-Mail Retention

Can I Print Messages, then Delete Them?

Yes, provided you print the following information with the message: name of sender, name of recipient, date and time of transmission and/or receipt. You then retain the printed message according to the appropriate records retention schedule, file them as suits your business needs, and destroy or transfer them to the Archives, depending on the schedule.

What about draft documents that undergo several revisions?

Draft documents or working papers that are circulated via e-mail, that propose or evaluate high-level policies or decisions and provide unique information that contributes to the understanding of major decisions of the agency should be preserved permanently.

Other drafts circulated for comment, which demonstrate significant revisions in the view of the author, should be scheduled as is the final product. Uncirculated drafts may be destroyed at will by the author.

What do I do with attachments I receive with e-mail?

File them with other electronic documents on your PC or network and apply the appropriate retention schedule. The principles of directory and file organization used in e-mail should be followed for content files (documents, databases, spreadsheets). If you have a PROJECTS\WORKFLOW\2000 folder in your e-mail system, you probably should have a similar one for related PC files. Attachments relevant to that project can be transferred to that directory.

What about multiple copies of the same document?

If another agency has responsibility for keeping a **record copy**, and if you have no business need to retain it, the document is simply a duplicate copy and subject to deletion/destruction at will. However, if the minutes of a meeting provide you with the authority to travel to Tahiti for a special seminar, definitely incorporate it into your "Effects of Sun on New Englanders" project files. You may need it.
So, minutes of meetings you attend may be destroyed at will. The secretary or other responsible person in the organization, committee or task force must retain the minutes permanently.

Where can I get help to organize my e-mail mailboxes & folders?

The Archives Records Management Services Division will offer general training as part of its ongoing Records Officer training workshops. Our Records Management Analyst will also respond to particular requests for assistance in organizing your electronic files - PC-based as well as e-mail.

Functional Requirements for Recordkeeping Systems

These general guidelines should be considered by state agencies as they approach the management of automated office records, including e-mail:

1. Recordkeeping systems must allow for the grouping of related records, to insure their proper context.

2. Recordkeeping systems must make records accessible to authorized staff, to insure their usefulness to the agency.
3. Recordkeeping systems must preserve records for their authorized retention period, to insure their availability for agency use, to preserve the rights of the government and citizens, and to allow agencies to be held accountable for their actions.

Implementation Schedule

This statement of policy reflects current retention requirements. Users of e-mail systems should have a management system in place to insure against inadvertent violations of records retention requirements.

Definitions

Electronic information system - A system that contains and provides access to computerized records and other information.

Electronic mail system - A computer application used to create, receive, and transmit messages and other documents. Excluded from this definition are file transfer utilities, databases and word processing documents not transmitted on an e-mail system.

Electronic mail message - A document created or received on an electronic mail system including brief notes, more formal or substantive narrative documents, and any attachments, such as word processing and other electronic documents, which may be transmitted with the message.

Electronic recordkeeping system - An electronic system in which records are collected, organized, and categorized to facilitate their preservation, retrieval, use, and disposition.

Record - All documentary material, regardless of media or characteristics, made or received and maintained by a state or local government agency in accordance with law and rule or in the transaction of its official business.

Record Copy - A single copy of a record retained by its custodian as the official record of a government transaction and in accordance with the appropriate records schedule. All other copies are duplicate copies, held for convenience, and may be destroyed.

Records Schedule - A listing of records retention periods formally adopted by the Archives Advisory Board and binding on all government employees.

Transmission and receipt data -

- Transmission data. Information in electronic mail systems regarding the identities of sender and addressee(s), and the date and time messages were sent.
- Receipt data. Information in electronic mail systems regarding date and time of receipt of a message, and/or acknowledgment of receipt or access by addressee(s).

End Note

A major element in the definition of a public record is that it documents an official transaction. The Freedom of Access Act defines a public record as "any written, printed or graphic matter or any mechanical or electronic data compilation from which information can be obtained . . . that is in the possession or custody of an agency or public official of this State or any of its political subdivisions . . . " with specific exceptions for confidentiality purposes. [1 MRSA 402 (3)]

The Archives and Records Management law [5 MRSA 92-A (5)] has similar language, defining a record as meeting the same criteria, without regard to confidentiality. Another section [95 (10-B)] authorizes the establishment of standards "concerning computerized and auxiliary automated information handling" necessary to the preservation of essential records.

Administrative rules affecting all state and local government agencies, adopted by the Archives, define records as "all documentary material, regardless of media or characteristics, made or received and maintained by a [state or local] government agency in accordance with law and rule or in the transaction of its official business".

Thus, e-mail sent or received and kept for official business is a record, and must be retained for periods established by the State Archives, in cooperation with government agencies.

More Information

For more information, visit the following websites:

MAINE STATE ARCHIVES – LOCAL GOVERNMENT RECORDS MANAGERS
http://www.state.me.us/sos/arc/localrec/localhom.html

CHAPTER 10 RULES FOR DISPOSITION OF LOCAL GOVERNMENT RECORDS
http://www.maine.gov/sos/arc/localrec/Chapter10.html

GENERAL DISPOSITION SCHEDULE FOR LOCAL GOVERNMENT RECORDS
http://www.state.me.us/sos/arc/recmgmt/localgov/locala.htm

Contact Nina Osier at Maine State Archives if you have any questions, problems or suggestions.
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