

• Dyer Library Saco Museum •



371 Main Street • Saco, Maine

DISASTER READINESS PLAN



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Disaster Readiness Plan

Table of Contents

Introduction	3
Staff Responsibilities	5
Priority of Collections.....	6
Disaster Prevention Maintenance	8
Prevention Plans.....	9
Emergency Procedures:	
Electrical or Power Outage	10
Fire Emergency	12
How to Use a Fire Extinguisher	13
Illegal Access to Building	14
Suspicious or Potentially Dangerous Patrons.....	15
Emotionally disturbed persons	16
Lonely, possessive or helpless person	17
Person under the influence of alcohol or drugs	18
Theft of Library Materials	19
Bomb Threats	20
Accidents Involving Water	21
Water Leaks: Immediate Action.....	22
Prioritizing Salvage Procedures: A Guideline	23
Salvaging Procedures:	
Drying Wet Books and Records - Technical Leaflet.....	25
Emergency Salvage of Photographs - Technical Leaflet	31
Protecting Books and Paper Against Mold - Technical Leaflet.....	33
Appendix A: Phone Numbers of Key People & Phone Tree	40
Appendix B: Client/Resource/Company List	42
Appendix C: Location List of Shut Off Valves	43
Appendix D.1: Floor Plans of Library • Main floor showing both wings	44
Appendix D.2: Floor Plans of Library • Art Loft	45
Appendix D.3: Floor Plans of Library • Second floor	46
Appendix D.4: Floor Plans of Library • Lower/Upper Attics	47
Appendix E: Appraisal List of Special Collections, artifacts, archives.....	48
Appendix F: Emergency Inspection Checklist.....	49
Appendix G: Supply List.....	51
Appendix H: Photographs	52
Appendix I: Bibliography.....	53

INTRODUCTION

“The greatest threat to library and archival materials in most disaster situations is water. Even if books are badly burned, they will also be soaked from the gallons of water pumped onto them to stop their burning. Disaster recovery procedures for library and archival materials rightly focus on recovery from water damage.” (*Preserving Library Materials* by Susan G. Swartzburg)

The Dyer Library is a medium sized privately funded public library of approximately 55,000 volumes including over 1000 cubic feet of collection, including pieces of fine art, glass slides, photographs, manuscripts, maps and period furniture. The library is the former homestead of Joseph G. Deering, owner of Deering Lumber. The library is part of the Dyer Library/Saco Museum Incorporated and is partly funded by the City of Saco and private endowments. It has a staff of 12. The budget is much smaller than an academic or a large publicly funded library, so consideration of cost of replacing materials vs. restoring materials is a factor in designing this plan. We have to carefully look at those things we would want to replace or withdraw. Many of the disaster plan models that I studied were designed for larger institutions. Our plan may seem lacking in comparison to them, but I feel that this plan is realistic and better tailored to our needs.

The Dyer Library building is old and was initially the homestead of Joseph G. Deering of Saco. In the 1950s, his sister Katherine and himself donated their home to the Dyer Library, which at that time was at what is now the City Hall. With funding provided by Joseph Deering, his home was converted to a library.

The design of the library was limited by the constraints of the home. In other words, it is the best design with many areas that are not visible to the librarians for security. Also it has many ADA issues that must be addressed in the future. It is also “spread out” quite a bit and consists of two building wings. One houses the adult service area and the other houses the juvenile and YA areas including meeting spaces. The area at the back of the library near the juvenile wing is not monitored and staffing can not monitor. Staff can not monitor these areas thus serious safety issues exists.

We also have many issues concerning the physical environment in the library including leaking roofs, loss of heat, extreme temperature changes and other physical challenges. Primarily, the Dyer Library Disaster Readiness Plan was developed as a guide to assist our librarians and staff in case of an emergency where the collections are endangered by water or fire. Although this disaster plan will include procedures in case of power outage or theft, the major focus of this plan is designed to instruct us on what to do should our materials be damaged through natural causes.

Although we are not likely to be hit by a tornado, hurricane or earthquake, the most likely disaster would be water damage from heavy storms or poor drainage around our property. Although most of our wiring is updated, there are certain parts of the building which are not up to

date. Therefore, the idea of a burst pipe in the basement or water seepage from faulty foundations is a possibility. Although we have smoke detectors, we do not have a sprinkler system, therefore, accidental fires or fires caused by arson would be devastating to say the least.

It is usually much less costly to purchase copies of damaged books. However, we have many irreplaceable items that would require restoration and/or rebinding that can be costly. This plan focuses on these items.

This is not an in-depth textbook style recovery plan. This plan is designed to be simple and straight forward — an instructional guide to assist our librarians and support staff on what to do in case of an emergency. It is to be reviewed once a year and changes are to be made as needed.

Anastasia S. Weigle, Director, Library & Archives
Dyer Library/Saco Museum, Maine
December 2005

STAFF RESPONSIBILITIES

In the event of any disaster, this plan lists appropriate library personnel who should be contacted immediately. These people will be responsible for making on-the-spot decisions about regarding the salvage or discarding of items.

Since we are a medium sized library with a medium size staff, team work is essential to the success of this plan.

In addition to acting in the event of a disaster, the people on this list will be responsible for routine considerations in the prevention of disasters. They should be familiar with the information contained in this booklet and be acquainted with the basic procedures to be followed in the event of a disaster. (see Appendix A for Phone Tree)

KEY LIBRARY PERSONNEL LIST

TITLE	NAME	PHONE #
Executive Director*	Donald Sharland	283-3801
Director, Library/Archives	Anastasia Weigle	934-2009
Museum Director	Andrea Strassner	286-2912
Adult Circulation Coord.	Cheryl Spaulding	282-9200
Children's Program Coord.	Martha Perkins	283-9374
Public Access/Automation	Stephanie Richard	929-8651
Building Overseer	Jim Macos	282-1246
HumResources/Safety Chair	Anne King	286-1653
Maintenance	Gerry Chatigny	284-4370

*NOTE: The Executive Director, with assistance from Library Director, is responsible for providing information for release to vendors, patrons and staff during a disaster — Start positive media campaign.

PRIORITY OF COLLECTION

A. FIRST PRIORITY ~ Immediate Attention ~ Irreplaceable

Archives & Special Collection: 2nd floor: front wing.

Maine History Room

1. Individual Family Genealogies
2. Family Genealogies
3. Vertical Files: Family Names
4. Architectural Survey Files
5. Deed of Gifts and Deed of Transfer Files

Archives Processing Room

1. Photographic collections
2. Manuscript Collections
3. Roy Fairfield Collection

Lower Attic

1. Processed Saco City records
2. Manuscript collections
3. All materials from Accession shelf.

Upper Attic.

1. Repository: Museum Archives
2. Church/Business Records
3. Candle Boxes with 19th century papers.

Vault: Located in lower level of nonfiction stacks

1. Although we feel very confident that the vault will not be breeched, we should investigate and remove ALL materials if necessary.

Library Director's Office

1. DESTINY Backup files (one back should be kept off site)

Administrative Office

1. Quickbook financial files (backup)
2. Donor Fund database (backup)

B. Second Priority ~ Difficult to Replace

Cage

1. Saco City Records

Art loft wing

1. Biddeford city records. *(Note: This is a temporary housing location for these records. At present, they are located there until a better, safer environment can be found. This may be a non-issue should this collection move to another location outside the Dyer Library)*

Executive Director's Office.

1. Institutional records kept in Exec. Dir. Filing cabinets

Director's Office

1. Black filing cabinet, Bottom file drawer only
2. Tall tan filing cabinet, bottom drawer, current personnel files

C. Tertiary Priority ~ Insured valuables, not relevant to institutions function.

1. Valuable art work and art objects at these locations:
 - Reading Room
 - Reference Room
 - Library Director's Office
 - Deering Room
 - Board Room
2. Furniture
 - Deering Room
 - Board Room

(This will require a moving company and temporary storage facilities such as Earle W. Noyes & Sons in Portland.
(see Appendix B: vendor List)

When you have a major disaster you have to think about those items that are difficult to replace. Computers and other equipment can be replaced. However, having backup files is imperative. This way you would never have to be concerned about saving any CPUs. Majority of circulating books, nonfiction and fiction, can be replaced. Irreplaceable manuscripts and documents can not. I look at those items that have enduring, historical, intrinsic, and archival value. ***Prepare a system to receive gifts and donations acknowledgment forms. Donations of books can help replace those items damaged.***

NOTE: Send press releases to library publications being very specific about what you need. List periodical subscriptions and ask for back copies.

DISASTER PREVENTION MAINTENANCE

An Instructional Guidelines

We all agree that it is better to prevent an accident or an emergency than have to deal with one. An Emergency Inspection Checklist has been put together that focuses on areas of potential hazards.

Inspections are to be made by Anne King, Safety Coordinator and Jim Macos, Building Overseer on a quarterly basis (i.e., the 1st of March, June, Sept. and Dec.) and is to be turned into the Library Director. Jim Macos maintains our building on a daily basis, making him the most likely to see any potential hazards as they arise. Nevertheless, our maintenance person and library staff members, who see or are concerned about any potential hazards are to notify the Library Director immediately. The checklist is helpful in that it allows us to immediately identify a problem, document it, and then take any necessary action to correct it. (see Appendix F for Emergency Inspection Checklist.)

PREVENTION PLAN

Things to Look for that Could Cause a Potential Accident

Water

Periodic inspections of the building for water leaks is important, especially during or after heavy rains or melting of heavy snow. There are presently no water leaks from pipes, windows, or plumbing.

However, a major leak appears at the main entrance of our building and at roof flashing that breaches the ceiling in the Art Loft area. Maintenance has provided tarpaulin in the Art Loft area and City Records are moved from that part of the room. Tarpaulin has been affixed to the ceiling where the entrance is until these major repairs can be addressed. (see Appendix F: Emergency Inspection Checklist.)

Fire Hazards

Check extension cords for excessive loading of electrical outlet.

Make sure extension cords are not frayed. Make sure flammable items are stored away from heat and kept in a cool area.

Make sure all plugs are grounded. Plugs not ground should be capped off.

Circuit Breakers and Fuse Cartridges

Circuit breakers occasionally overload and turn off. These can be easily reset by turning off and on the fuse that “popped”. However, when a fuse cartridge goes, a loss of power will affect a large portion, if not all of the building. If a fuse cartridge blows, call Jim Macos to service the problem. *(See appendix H for photographs)*

EMERGENCY PROCEDURES

ELECTRICAL OR POWER OUTAGE

SAFETY FIRST: In case of a power failure, the first concern of the staff is for safety of the people in the library. If the power failure is prolonged, standard evacuating procedures should be followed. Deering and Board Rooms, Stacks, Art Loft, Second Floor administrative offices and archives should be check for patrons and staff.

NOTIFICATION:

1. Notify Executive Director
2. Librarian-in-charge should call Maine Central Power 1-800-696-1000 and find out how long power outage will be if problem is external.
2. If internal, contact Building Maintenance, Jim Macos 282-1346. If he can not be reached, call electrician, Joe Graves of Graves Electric at 283-1439.

OPERATIONS:

1. If failure occurs during daytime hours, there may be sufficient natural light to continue library operations. However, if failure is expected to continue for an extended period of time, evacuation should proceed.
2. In NO way, should the library be open with no power during evenings hours or after sunset.

GENERAL INFO:

Auxiliary lighting at the Dyer Library is located in

- Adult Circulation Desk, to left, above bulletin board
- YA area, outside Library Director's office
- Children's Room
- Inside Deering Room
- Deering Room Hallway exit door.
- Outside Administrative Office on Second floor
- At bottom of stair well from second floor.

Exit Signs located at the following area:

- Above exit door rear hallway (Deering Room back hallway)
- Above door in Deering Room that exits into back hallway
- Above double doors in Deering Room
- Children's Room interior exit doors
- At entrance of Children's Room
- Although there is no lit Exit sign at the front of the building (old front door entrance), there is a fairly large red sign with white lettering that says, "Emergency Exit: Alarm door"

FLASHLIGHT:

Routine monthly checks should be made to be certain that,

- 1) flashlights remain in designated locations, and
- 2) in first class operating condition.

Flashlights are at the following locations:

- Staff Kitchen, on top of Rennie Security System Box (2)
- Children's Room: in drawer of cabinet behind circulation desk. Identified with signage "Flashlight Here"
- Executive secretary's office by window new her desk
- In Public Access/Automation librarians desk drawer
- Adult circulation area, under counter in basket
- Art loft between the two doors that take you into the storage area
- Archives attic near fire extinguisher

FIRE EMERGENCY

IMMEDIATE ACTION

A. Keep Calm: you help no one by panicking and you may panic others.

B. Get the People Out: Follow standard evacuating procedures: Physically check Deering and Board rooms; staff and patron bathroom; both stack areas; stairwell to upper level; art loft and archives patrons and/or staff; and make sure they leave using emergency exits only. Those on the second floor must leave from stairwell and out the emergency front doors.

Report to the Librarian-in-Charge that everyone is out. (The designated person is usually the Library Director or Librarian-in-Charge. Since there are two wings at Dyer Library (adult and juvenile), each Coordinator in those areas is responsible for ensuring patrons and staff are out.

Keep your voice calm but firm and audible when instructing patrons to exit building.

If possible, shut down boiler using emergency switches located outside the mechanical room.

C. Fire Department: The library has a number of smoke detectors that can set off the fire alarm. The fire alarm is connected to Rennie Security who then contacts the fire department. Meet firemen at the entrance of the building. Rennie Security will let fire department know where fire or smoke started.

D. Notify the Executive Director and Disaster Team: Call Executive Director and/or President/Vice President of Board of Trustees, Insurance Representative and the Disaster Team. (see Appendix A for Phone Tree).

E. Sprinkler System: There is no sprinkler system. This means that we will not only have water damaged books, but a great deal of fire and smoke damaged books as well.

NOTE: The fire alarm panel located at the entrance of the adult circulation area should be checked for system performance. Rennie Security (282-4041)

HOW TO USE A FIRE EXTINGUISHER

The Dyer Library has (9) extinguishers. They are located at the following sites (see Appendix D for floor plans):

1. In Children's Room
2. Outside Library Director's Office
3. At top of stairwell in Art Loft area.
4. In furnace room located at Deering Wing
5. At top of stairwell to lower level in non-fiction stacks
6. On video bookcase at entrance to art gallery hall
7. Top of stairwell outside Executive Secretary's Office
8. At top and to left of stairwell in archives (lower attic)
9. Basement, near internet router

Operation instructions and cautions for the extinguisher are printed on the nameplates. Read and understand them before a fire occurs.

Most types of extinguishers discharge their contents in 8 to 25 seconds depending upon size. It is therefore important that the extinguisher is aimed correctly at the fire before it is operated.

Be prepared for the discharge. **There will be a slight backward reaction as the agent is being discharged from the nozzle.**

Stand 6 to 10 feet away from fire and aim at base of flames with a side to side sweeping motion.

Have extinguishers recharged as soon as possible after use. Our vendor for recharges, replaces or repairs extinguisher is Lindy Fire Equipment 284-4247

ILLEGAL ACCESS TO BUILDING
(Robbery and/or Vandalism)

The building is alarmed by Rennie Security System. We have motion detectors as well as contact points which set off the alarm when “broken”. When an alarm is set off during library closure, Rennie Security calls the Executive Director. If they can not contact the Executive Director, they contact the Library Director.

If no one can be reached, the Police Department is called to the library. The police will then attempt to notify the library. In case of a break-in, the following must be done:

1. Executive Director notifies the Library Director and Disaster Readiness Team to meet at the library.
2. Call insurance company.
3. Building Overseer, Jim Macos, should be present to check on any physical damage done to the building and temporarily repair any broken windows and/or doors (boarding up). He is responsible for making arrangements to contact appropriate people (carpenter, locksmith, glazier, electrician, plumber, etc.) to make necessary repairs.
4. The Library Director will make the decision to shut down the library if need be.
5. Once police are finished, Disaster Team will assess any damage done to the collection and make notes of damages/missing items for insurance company.
6. Check the following items/areas
 - Check petty cash drawers
 - Inventory equipment (computers/printers)
 - Check Archives and Special collection
 - Inventory fine arts (paintings and three-dimensional objects.)

NOTE: If any of the book collection has been damaged, a decision will be made to repair, replace or withdraw the item.

SUSPICIOUS OR POTENTIALLY DANGEROUS PATRONS

IMMEDIATE ACTION

A. Stay Calm ~ Do not get involved in an argument. Speak calmly and firmly to the person involved.

B. Listen ~ Try to accept the person's point of view.

C. Be Patient ~ Gain as much time as possible since a person's perception may be only temporarily distorted.

D. Your attitude ~ Library personnel should always be pleasant, considerate, helpful and understanding. A person who is mentally disturbed may only require a slightly abrasive experience to reduce him to desperation.

BE ALERT TO THE POSSIBILITY OF VIOLENCE

A. The Librarian should be alert to the possibility of violence or abuse, be it physical or verbal. If the situation becomes intense no matter how calmly the Librarian is speaking, a second staff member should call the police while the other librarian is trying to calm the situation.

B. Call the Saco Police (**284-7819**) and give the following information, if known:

- The patron's name
- The symptoms or description of behavior

NOTE: Behind both the adult circulation desk and children's circulation desk are alert buttons. The librarian should not hesitate to use these if they are not near the phone.

EMOTIONALLY DISTURBED PERSONS

Emotionally disturbed persons may be suffering from mental illnesses or disorders characterized by somewhat bizarre external behavior, hallucinations, or delusions. They can be extremely withdrawn, timid, and uncooperative or violently aggressive.

The following are some suggestions for dealing with emotionally disturbed persons:

- If the person requires assistance or becomes a disruptive influence, remain at a comfortable, safe distance.

- DO NOT touch the person.

- DO NOT stare or point.

- DO NOT laugh or whisper.

- DO NOT overcompensate for your anxiety and concern by being overly friendly and solicitous, or by being hostile and confrontational.

- If approached by the person, speak calmly, directly, and honestly.

- Respond to questions, requests, or statements matter-of-factly.

- DO NOT endorse or contradict a person's hallucinations or delusions.

If the person is agitated and difficult to control, notify Saco Police immediately at 911.

An incident report must be written to document event. This incident report may become useful in the future if the same problem arises or if there are any questions from the police.

LONELY / POSSESSIVE / HELPLESS PERSONS

Such persons often wish to monopolize the time of library staff and other library users. They may engage in excessively long conversations and may resent efforts to encourage them to terminate the discussion. These individuals are usually friendly and eager to be even friendlier. However, they can also be abrupt, rude, impatient in their demeanor, and extraordinarily persistent in their requests for assistance and services. They may appear quite helpless or are unwilling to exert any effort to help themselves, and they are quick to take personal offense at negative answers. They frequently are unwilling to accept explanations of necessary limits to service.

1. When assisting a person who wishes to monopolize your attention, set a limit on the amount of time you can allow. Explain that you hope you can help the person, but as others are waiting, you can give only about xxx minutes to each person.
2. Paraphrase the questions/requests put to you and say you wish to understand exactly what is needed.
3. Make brief written notes of the person's inquiries to show that you are identifying the elements of the problem.
4. Give clear, step-by-step answers to questions--on paper, if possible--and encourage the person to be self-sufficient. DO NOT set a precedent of doing everything for the person.

PERSONS SUSPECTED OF BEING UNDER THE INFLUENCE OF ALCOHOL AND/OR DRUGS

Persons who have consumed sufficient alcohol to be noticeably intoxicated can generally be detected by their alcoholic breath. It is often difficult to ascertain whether persons who exhibit aberrant behavior are under the influence of drugs or suffering from physiological disorders. All such persons may exhibit abrupt and extreme changes of mood and should be approached with caution.

If someone behaves in such a way that you suspect drugs or excessive alcohol:

1. Notify Saco Police immediately at 911.

Be discreet! Maintain a nonjudgmental attitude. Do not make the person feel watched or cornered. Keep a comfortable, "safe" distance and DO NOT touch the patron.

**CRIMINAL BEHAVIOR:
THEFT OF LIBRARY MATERIALS**

If library staff witnesses the theft of materials:

1. Try to get another person who has witnessed the behavior, if at all possible.
2. Approach patron and ask if the person has any books, videotapes, or other materials that may not have checked out yet
3. If you see any such materials, ask if the person had been planning to check them out.
4. If the person surrenders the materials, keep them behind the desk and discuss with the patron the severity of stolen materials. Give the patron the benefit of the doubt, but make it clear that theft of materials not only hurts the library but patrons as well
4. If the person leaves without stopping or leaves with the materials, do not follow the person.
5. Be sure to notice what the person looks like and give an accurate description for the report.

Past experience tells us if we approach a patron who has stolen materials and they leave the library, they will most likely never return. It is important that we make a note on their library records that materials have been taken from the library and need to be return. Revoke all library privileges until matter is resolved.

BOMB THREAT

If you receive a telephone threat:

Listen carefully. Be polite and show interest. Try to keep the caller talking so that you can gather as much of the following information as possible:

When will the bomb explode?
Where is it (which floor, area, etc.)?
What does it look like?
What kind of bomb is it?
What will cause it to explode?
When was it planted?
Did the caller plant the bomb?
Why?
What is the caller's name?

If possible while on the phone, write a note to a colleague to call the Saco Police, or phone as soon as the caller hangs up.

If evacuation is ordered by Police, follow the correct procedures.

1. Ensure all staff and patrons have exited the 2nd floor
2. Ensure children's room staff and patrons have exited
3. Ensure adult area is cleared.
4. Do not return to building until Police have deemed the area safe

Promptly write a report that includes as many details as you can remember, such as:

The exact words of the caller.
The caller's gender.
Any distinctive vocal characteristics.
Any background noises.

ACCIDENTS INVOLVING WATER

Although the Dyer Library is not considered near a flood plain, it does have grading issues and water does collect around the perimeter of building. Heavy rains can cause flooding or small leaks near roof flashings.

IMMEDIATE ACTION FOR BURST PIPES

A. Major flooding may require the Fire Dept for assistance. The fire department carries many salvage tarps and other equipment for water damage control. The Librarian-in-Charge should attempt, if possible, to go down to cellar and turn off main water supply line (*see Appendix C: Location List of Shut Off Valves.*) *Shut off valve is clearly marked.* Do not touch main power switch. Have electrician (Joe Graves, 283-1439) come and disconnect power. There is extreme danger of shock.

B. Building must be evacuated using standard evaluation procedure. If burst pipes happen before library opens, library will not open until situation is resolved.

C. Library Director/Librarian-in-Charge will call Gilbert & Son Plumbing & Heating (284-6257) for service and notify Jim Macos (282-1246) to assist in clean up.

D. Should burst pipes affect library materials, find location to which water-soaked books and records can be transferred. Area should be adequately ventilated and be entirely isolated from other library collections and in an area containing no rugs or other floor covers that might be damaged by water. A good place would be to set up in Deering Room. However, the Deering Room has carpet. I suggest we lay clear plastic or tarpaulin over carpet. This will be our location to proceed in any salvage repairs.

FOLLOW-UP

1. Disaster readiness team should assess any damages and make decision on what to discard and what to salvage.

WATER LEAKS ~ IMMEDIATE ACTION

- A. Move materials out of the area affected.
- B. Cover affected area with plastic and/or wastebaskets.
- C. Contact Jim Macos [282-1246] for inspection of building and clean up.
Contact Gilbert & Son Plumbing & Heating (284-6257)

PRIORITIZING SALVAGING PROCEDURES: A Guideline

These guidelines are to help the librarians establish work areas, deciding what to salvage, categories of treatment, and what to discard. Please see “Technical Leaflet: Drying Wet Books and Records”, “Technical Leaflet: Emergency Salvage of Photographs”, and “Technical Leaflet: Protecting Books and Paper against Mold”.

1. Follow recommendations in “Priority of Collections” on page 5. Keep in mind we can not save everything, so we will concentrate on those items that are irreplaceable, hard to replace, or have historical value to the library.

2. Determine what treatments need to be done on collection, so items can be directed to appropriate locations for different treatments (i.e. slightly damp, wet edges and soaked in water.)

3. Establish work areas with a temperature not above 65°F and relative humidity of 45 to 50%. Different areas should be used for different procedures: for drying, for washing, and for packing. Work tables should be set up and covered with polyethylene sheeting.

4. Give instructions on labeling boxes, packages, and or single items. Inventory materials as they are removed. Give location in which material is found, its destination, and its priority.

5. Remove the most wet materials first in order to decrease humidity.

6. The Deering Room is a designated place to set up salvaging procedures since it can house a large number of work tables. Make sure to cover floor with drop cloth or tarpaulin.

SALVAGING PROCEDURES



NEDCC TECHNICAL LEAFLET
Section 3, Leaflet 7
EMERGENCY SALVAGE OF WET BOOKS AND RECORDS

*by Sally Buchanan, Associate Professor
School of Information Science, University of Pittsburgh*

The recovery of books and records after exposure to a water-based emergency can be successful and cost-effective if staff and management are prepared ahead of time and react in a timely way. Many libraries and archives have recovered in splendid form because staff knew precisely what to do in an emergency. However, if decisions and actions are delayed more than a few hours, collections may be lost or so seriously damaged that recovery becomes a major undertaking. Funds must be diverted from other projects. Service for the public and scholars is interrupted, and public relations suffer. The key steps for a satisfactory emergency recovery include:

- Timely initial response
- A detailed disaster plan
- Educated staff
- Committed management
- Effective communication
- Quick, informed decisions

Rapid response is essential for an effective recovery effort. Paper-based collections begin to distort physically immediately after becoming wet. Books swell and distort; paper cockles; inks and pigments run; coated papers begin to adhere to one another. Materials that could be dried easily and relatively inexpensively if attended to quickly become candidates for rebinding, expert conservation, or discard. Unfortunately, many librarians believe that replacement of water-damaged materials is the best solution, only to find that many items are not replaceable. Or they are replaceable in formats that are not acceptable to users or compatible with service goals. Collections of some breadth and depth may never recover their former distinction.

If environmental conditions are poor after a water problem, mold will begin to bloom in as little as 2-3 days, developing first in the gutters and spines of bound materials, and spreading rapidly thereafter. Once established, mold is extremely difficult to control and eradicate, frequently causing problems in the facility for many months after the recovery effort is concluded.

Recovery from exposure to water is more successful if collections and facilities are stabilized as soon as possible. This means that the immediate environment must receive attention. Water must be removed; temperature and humidity controlled; and dry collections protected. At the same time, wet books and records should, in most instances, be removed from the site following accepted procedures, and stabilized by freezing.

After a serious water emergency, questions often arise that deserve attention. Are any of these materials expendable because they no longer are used, have no relationship to the current collection development plan, or have no value? Can they be purchased in another format that will

be acceptable to users? Would the purchase in another format create hidden expenses in the future? For example, will there be a need to upgrade equipment, hardware, or software to access the information? Does the institution have obligations to the region or even the world's library?

For books and records that have been water damaged, there are several drying techniques which have been tested and perfected over the past decade. The selection of one or more of these depends upon the extent and severity of water damage, the composition of the materials affected, the expected use and retention of the collections, and the documented facts related to the overt and hidden costs of recovery using various drying methods. These will be described briefly with comments about the kinds of damage and the specific collection materials for which they were developed as well as the short- and long-term costs of employing them.

Advice from a preservation manager or a conservator experienced in disaster recovery can be helpful before making final decisions. If rare books or unique materials are involved, a conservator should always be consulted so mistakes can be avoided. Successful recovery operations over the past decade have demonstrated repeatedly that if sound recovery methods are followed, it is less expensive to dry original collections than to replace them.

It is important to understand that no drying method restores collections. If time must be taken to make critical decisions and materials have distorted badly, that is the way they will look when dry. However, if collections are stabilized quickly, they can often be dried and returned to the shelves with little discernible damage.

Air Drying

Air drying is the oldest and most common method of dealing with wet books and records. It can be employed for one item or many, but it is most suitable for small numbers of damp or slightly wet books and documents. Because it requires no special equipment, it is often believed to be an inexpensive method of drying. But it is extremely labor intensive, it can occupy a great deal of space, and it usually results in badly distorted bindings and textblocks. It is seldom successful for drying bound volumes with coated paper. The rehabilitation costs after air drying tend to be extensive because most bound material requires rebinding. Single sheets are often distorted requiring flattening and rehousing. It is not unusual for mold to develop during extensive air-drying operations. Another hidden cost of air drying is the extra amount of shelf space required for collections. Depending upon how quickly wet materials are stabilized, the minimum amount of additional space required after drying will be 20%-30%.

Dehumidification

Drying by dehumidification has been employed for many years by business and industry to dry out buildings, the holds of ships, and mammoth storage containers. Large, commercial dehumidifiers are placed in a facility with all the collections, equipment, and furnishings left in place. Temperature and humidity are carefully controlled to specifications. This drying method is especially effective for library or archives buildings that have suffered extensive water damage to the structure itself. It can be used for collections that have suffered only slight to moderate water damage, but is not safe for water-soluble inks or pigments. Slightly damp coated paper may be dried this way if swelling and adhesion have not taken place before the process is initiated. The

number of items that can be treated with dehumidification is limited only by the expertise or the equipment of the company. This drying method has the advantage of leaving the collections in place on the shelves and in storage containers, eliminating the costly step of removal to a freezer or vacuum chamber. Dehumidification is especially effective in conjunction with other drying methods and for stabilizing the building and environment.

Freezer Drying

A modest number of books and records that are only damp or moderately wet may be dried quite successfully in a self-defrosting blast freezer if left there long enough. The temperature in the freezer must be maintained no warmer than -10 degrees F. Materials should be placed in the freezer as soon as possible after becoming wet. Books will dry best if their bindings are supported firmly to inhibit initial swelling. One method is to support books between clear acrylic "boards" with holes drilled in them to facilitate drying. The book and boards can be wrapped with a strong elastic cord which will keep them firmly supported as the books dry and shrink slightly. Documents may be placed in the freezer in stacks or spread out for faster drying. Small numbers of leather and vellum bindings can be dried successfully this way. Expect this method to take from several weeks to many months, depending upon the temperature of the freezer and the extent of water damage, because it is a passive technology. Caution is advised with coated paper as leaves may adhere to one another while drying. If items are placed in the freezer very soon after becoming wet, additional shelf or storage space will be held to a minimum.

Thermaline or Cryogenic Drying

This is the copyrighted name for a new drying technique currently being tested and revised to meet special needs. Intended primarily for rare book and manuscript collections, the process was developed to address the difficulty of drying large numbers of rare books bound in leather or vellum. It employs blast freezers at very low temperatures and is an advanced variation of the Freezer Drying method described above, using sophisticated technology to hasten the drying in a more active approach. Because books receive a great deal of individual handling to ensure the most effective drying with the least amount of damage, this process is the most expensive of the drying methods. It is safe for water-soluble media and for coated papers. As with vacuum freeze drying, if carried out properly, Thermaline Drying never distorts materials as a result of the process.

Vacuum Freeze Drying

This process calls for sophisticated equipment and is especially suitable for large numbers of wet books and records as well as for water-soluble inks and for coated paper. Frozen books and records are placed in a vacuum chamber. The vacuum is pulled, a source of heat introduced, and the collections, dried at temperatures below 32 degrees F, remain frozen. The physical process known as sublimation takes place--i.e., ice crystals vaporize without melting. This means that there is no additional wetting, swelling, or distortion beyond that incurred before the frozen materials were placed in the chamber. If materials have been stabilized quickly after becoming wet, very little extra shelf or storage space will be required when they are dry. 10% additional shelf space is a sound estimate to use for planning.

Many coated papers can be difficult to dry without adhering once they are wet. Because it is

nearly impossible to determine which paper will block, all coated papers should be treated the same way for the purpose of vacuum freeze drying: before any drying takes place, and ideally within six hours of exposure, materials should be frozen at -10 degrees F or lower. They may then be vacuum freeze dried with a high potential for success. Rare and unique materials can be dried successfully by vacuum freeze drying, but leathers and vellums may not survive. Although this method may initially appear to be more expensive because of the equipment required, the results are often so satisfactory that additional funds for rebinding are not necessary, and mud, dirt and/or soot are lifted to the surface, making cleaning less time-consuming. If only a few books are dried, vacuum freeze drying can be expensive. However, companies that offer this service are often willing to dry one client's small group of books with another client's larger group, reducing the per-book cost and making the process affordable.

Vacuum Thermal Drying

Books and records that are slightly to extensively wet may be dried in a vacuum thermal drying chamber into which they are placed either wet or frozen. The vacuum is drawn, heat is introduced, and the materials are dried just above 32 degrees F. This means that the materials stay wet while they dry. This method is used extensively in the food industry for freeze drying certain foods. It is an acceptable method of drying wet records that have no long-term value. The method often produces extreme distortion in books, and almost always causes blocking of coated paper. For large numbers of collections, vacuum thermal drying is easier than air drying and almost always more cost-effective. However, extensive rebinding or recasing of books should be expected as should the need for expanded shelf or storage space.

How to Air Dry Wet Records

Wet records may be air dried if care is taken to follow guidelines suggested by preservation experts. The technique is most suitable for small numbers of records that are damp or water damaged only around the edges. If there are hundreds of single pages, or if the water damage is severe, other methods of drying will be more satisfactory and cost-effective. Stacks of documents on coated, or shiny, paper must be separated immediately to prevent adhesion, or they must be frozen to await a later drying decision. Care must be taken with water-soluble inks as well. Records with running or blurred inks should be frozen immediately to preserve the written record. After the items are frozen, conservators can be contacted for advice and assistance.

If records must be air dried, the following steps will help achieve satisfactory results. Wet paper is extremely fragile and easily torn or damaged, so care must be exercised. Once wet, records will never look the same, and at least some cockling should be expected.

1. Secure a clean, dry environment where the temperature and humidity are as low as possible. The temperature must be below 70 degrees F. and the humidity below 50%, or mold will probably develop and distortion will be extreme.

2. Keep the air moving at all times using fans in the drying area. This will accelerate the drying process and discourage the growth of mold. If materials are dried outside, remember that prolonged exposure to direct sunlight may fade inks and accelerate the aging of paper. Be aware that breezes can blow away single records. Train fans into the air and away from the drying

records.

3. Single leaves can be laid out on tables, floors, and other flat surfaces, protected if necessary by paper towels or clean, unprinted newsprint, or clotheslines may be strung close together and records laid across them for drying.

4. If records are printed on coated paper, they must be separated from one another to prevent them from sticking. This is a tedious process that requires skill and patience. Practice ahead of time will prove useful. Place a piece of polyester film on the stack of records. Rub it gently down on the top sheet. Then slowly lift the film while peeling off the top sheet. Hang the polyester film up to dry on a clothesline using close pins. As the document dries, it will separate from the surface of the film, so it must be monitored carefully. Before it falls, remove it and allow it to finish drying on a flat surface.

5. Once dry, records may be rehoused in clean folders and boxes, or they may be photocopied or reformatted in other ways. Dried records will always occupy more space than ones that have never been water damaged.

How to Air Dry Wet Books

Air drying is most appropriate for books that are only damp or wet in limited places such as along the edges. Books that are soaking wet should be frozen and vacuum freeze dried to minimize cockling of pages and distortion of the text block and binding. Books containing coated paper should be frozen while still wet and vacuum freeze dried for best results. Books with running or blurred inks must be frozen immediately to preserve the contents.

1. Refer to steps 1 and 2 in the section *How to Air Dry Wet Records*.

2. Interleave every few pages, starting from the back of the book, turning pages carefully. For interleaving, use paper towels or clean, unprinted newsprint. Be careful to avoid interleaving too much or the spine will become concave and the volume distorted. Complete the interleaving by placing clean blotter paper inside the front and back covers. Close the book gently and place it on several sheets of absorbent paper. Change the interleaving frequently. Turn the book from head to tail each time it is interleaved.

3. When books are dry but still cool to the touch, they should be closed, laid flat on a table or other horizontal surface, gently formed into the normal shape, with convex spine and concave front edge (if that was their original shape), and held in place with a light weight. Do not stack drying books on top of each other. In no case should books be returned to the shelves until thoroughly dry; otherwise mold may develop, particularly along the gutter margin.

4. Dampness will persist for some time in the gutter, along the spine, and between boards and flyleaves. This is particularly true of volumes sewn on an oversewing machine. Check often for mold growth while books are drying.

5. If the edges of the book are only slightly wet, the book may be stood on end and fanned open slightly in the path of a flow of air (as from a fan). To minimize distortion of the edges, lay volumes flat under light pressure just before drying is complete. Paper or cloth-covered bricks work

well for weights.

6. If you can establish an air-conditioned room capable of maintaining a constant relative humidity of 25 to 35% and temperature between 50 and 65 degrees F, books with only wet edges can be dried successfully in approximately two weeks without interleaving. Do not try to dry books printed on coated paper by this method. In most cases, the only chance of saving such books is to freeze them while they are wet and dry them by vacuum freeze drying.

Acknowledgements

The author acknowledges expertise from many people who have contributed to the understanding of emergency recovery methods. These include Willman Spawn, Peter Waters, Olivia Primanis, and the staff at NEDCC. Copyright 1999, Northeast Document Conservation Center. All rights reserved.

NEDCC TECHNICAL LEAFLET
Section 3, Leaflet 8
EMERGENCY SALVAGE OF WET PHOTOGRAPHS

by Gary Albright

Senior Paper/Photograph Conservator, Northeast Document Conservation Center

Because of the number of photographic processes and their wide variety, responsible advice for the emergency salvage all kinds of wet photographs is difficult to provide. Some processes can withstand immersion in water for a day or more, whereas others would be permanently disfigured or even destroyed by a couple of minutes of exposure. In general, wet photographs should be air dried or frozen as quickly as possible. Once they are stabilized by either of these methods, there is time to decide what course of action to take.

Ideally, salvage should occur under the supervision of a conservator who can minimize damage to a collection if he or she can direct the salvage and treat the collection immediately after the damage has occurred. Time is of the essence: the longer the period of time between the emergency and salvage, the greater the amount of permanent damage that will occur.

MINIMIZE IMMERSION TIME

Photographs in water will quickly deteriorate: images can separate from mounts, emulsions can dissolve or stick together, and staining can occur. Mold can grow within 48 hours at 60% relative humidity and 70°F, and it often causes permanent staining and other damage to photographs. For these reasons photographs need to be dried as quickly as possible. If photographs cannot be dried they should be frozen.

SALVAGE PRIORITIES FOR WET PHOTOGRAPHS

* In general, films (plastic-based materials) appear to be more stable than prints (paper-based materials); therefore, prints should be salvaged first. Important exceptions include deteriorated nitrate and safety films, which are extremely susceptible to water damage.

* Photographs made by the following processes should be salvaged first: ambrotypes, tintypes, collodion wet plate negatives, gelatin dry plate negatives, lantern slides, deteriorated nitrate or safety film, autochromes, carbon prints, woodburytypes, deteriorated or unhardened gelatin prints, and color materials. Photographs made by many of these processes will not survive immersion.

* Photographs that are more stable in water include: daguerreotypes, salted paper prints, albumen prints, collodion prints, platinum prints, and cyanotypes.

AIR DRYING PHOTOGRAPHS

- If personnel, space, and time are available, photographs can be air dried.
- Separate photographs from their enclosures, frames, and from each other. If they are stuck together or adhered to glass, set them aside for freezing and consultation with a conservator.
- Allow excess water to drain off the photographs.
- Spread the photographs out to dry, face up, laying them flat on an absorbent material such as blotters, unprinted newsprint, paper towels, or a clean cloth.
- Keep the air around the drying materials moving at all times. Fans will speed up the

drying process and minimize the risk of mold growth.

- Negatives should be dried vertically. They can be hung on a line with plastic clips placed at the edges.
- Photographs may curl during drying. They can be flattened later.

FREEZING PHOTOGRAPHS

- If immediate air drying of photographs is not possible or if photographs are stuck together, freeze them.
- Wrap or interleave photographs with waxed paper before freezing.
- Interleave or wrap individual photographs or groups of photographs before freezing with a non-woven polyester material or waxed paper. This will make them easier to separate when they are eventually treated.

DRYING FROZEN PHOTOGRAPHS

- Frozen photographs are best dried by thawing, followed by air drying. As a stack of photographs thaws, individual photographs can be carefully peeled from the group and placed face up on a clean, absorbent surface to air dry.
- Vacuum thermal drying, where the frozen material is thawed and dried in a vacuum, is not recommended for photographs. Gelatin photographs undergoing this procedure have a tendency to mottle severely and stick together.
- Photographs can be vacuum freeze dried; in this process no thawing occurs. Gelatin photographs may mottle during the procedure, but they will not stick together.
- Wet collodion glass plates must never be freeze dried; they will not survive. This is also true for all similar collodion processes such as ambrotypes, collodion lantern slides, and tintypes.

SALVAGING SLIDES

- Slides can be rinsed and dipped in a water/Photo-flo mixture, slide cleaner, or a similar commercial product and air dried; preferably they should be hung on a line or propped on edge.
- Ideally, slides should be removed from their frames for drying and then remounted.
- Slides mounted between glass must be removed from the glass or they will not dry.

CALL A QUALIFIED CONSERVATOR

Dried or frozen photographs are reasonably stable. Store them until you can talk to a conservator who has experience with photographs and can advise you of treatment needs.

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NEDCC TECHNICAL LEAFLET
Section 3, Leaflet 9
EMERGENCY SALVAGE OF MOLDY BOOKS AND PAPER
by Beth Lindblom Patkus
Preservation Consultant, Walpole, MA

INTRODUCTION

Most librarians and archivists have seen the effects of mold on paper materials, but many have never experienced an active mold outbreak. Dealing with such an outbreak (large or small) can be overwhelming. This leaflet provides some basic information about mold and outlines the steps that need to be taken to stop mold growth and begin to salvage collections.

Please note that the actions recommended here are basic stabilization techniques to be undertaken in-house for small to moderate outbreaks. The complexities of dealing with a large number of wet and moldy materials will usually require outside assistance, and some suggestions for dealing with a major mold outbreak, appear at the end of this leaflet. In all cases, a conservator or preservation professional should be consulted if any questions arise or if further treatment is necessary.

WHAT IS MOLD?

Mold and mildew are generic terms that refer to various types of fungi, microorganisms that depend on other organisms for sustenance. There are over 100,000 known species of fungi. The great variety of species means that patterns of mold growth and the activity of mold in a particular situation can be unpredictable, but it is possible to make some broad generalizations about the behavior of mold.

Mold propagates by disseminating large numbers of spores, which become airborne, travel to new locations, and (under the right conditions) germinate. When spores germinate, they sprout hair-like webs known as mycelium (visible mold); these in turn produce more spore sacs, which ripen and burst, starting the cycle again. Molds excrete enzymes that allow them to digest organic materials such as paper and book bindings, altering and weakening those materials. In addition, many molds contain colored substances that can stain paper, cloth, or leather. It is also important to realize that mold can be dangerous to people and in some cases can pose a major health hazard. Mold outbreaks should never be ignored or left to "go away on their own."

WHY DOES MOLD GROW?

To germinate (become active), spores require a favorable environment. If favorable conditions are not present, the spores remain inactive (dormant); in this state they can do little damage.

The most important factor in mold growth is the presence of moisture, most commonly in the air, but also in the object on which the mold is growing. Moisture in the air is measured as relative humidity (RH). In general, the higher the RH the more readily mold will grow. If the RH is over 70% for an extended period of time, mold growth is almost inevitable. It is important to remember, however, that it is possible for some species of mold to grow at lower RH as well. If collections have become wet as the result of a water disaster, this increases their susceptibility to mold growth. Other factors that will contribute to mold growth in the presence of moisture are high temperature, stagnant air, and darkness.

Mold spores, active or dormant, are everywhere. It is not possible to create an atmosphere free of spores. They exist in every room, on every object in the collection, and on every person entering the collection area. The only wholly dependable control strategy is to keep the humidity and temperature moderate so the spores remain dormant, keep collections as clean as possible, and prevent the introduction of new active mold colonies.

BASIC PRINCIPLES OF SALVAGE

REDUCE THE HUMIDITY: As noted above, moisture initiates mold growth. Reducing the humidity is essential to stopping the mold growth.

DO NOT TURN UP THE HEAT: This will not help to dry out collections and storage areas. Additional heat in the presence of moisture will cause the mold to grow faster.

IF COLLECTIONS ARE WET, DRY OR FREEZE THEM: Mold will normally grow on wet materials in about 48 hours (sometimes sooner). If you know you cannot get the affected material dry within 48 hours, it is best to freeze it. This will not kill the mold, but it will stop further growth until you have a chance to dry and clean the material.

CONSIDER THE HEALTH RISKS: A few mold species are toxic to people, and many molds are powerful sensitizers. Exposure to mold can lead to debilitating allergy even among people not prone to allergies. Everyone who works with moldy objects must be properly protected.

AVOID "QUICK AND EASY" CURES: "Quick cures" that you may have heard about (such as spraying Lysol on objects or cleaning them with bleach) may cause additional damage to items or be toxic to people; they are also often ineffective. In the past, mold-infested collections were often treated with fumigants. Ethylene oxide (ETO) will kill active mold and mold spores; other chemicals that have been used are less effective. All of these chemicals can have adverse effects on both collections and people, and none of them will keep the mold from recurring.

STEP-BY-STEP SALVAGE

This section provides specific steps for responding to a small or moderate mold outbreak. While the steps are numbered for convenience, they may not be carried out in exactly this order, and some of these activities will occur simultaneously.

1. Find out what is causing the mold growth. You need to know what is causing the problem so that additional mold on collections not yet affected can be avoided.

- Look first for an obvious source of moisture, such as a water leak.
- If there is no obvious source of moisture, use a monitoring instrument to measure the relative humidity in the affected area. If the humidity is elevated, there might be a problem with the HVAC (heating, ventilating, and air conditioning) system, or the area might be subject to higher humidity for another reason, such as having shelves placed against an outside wall. Mold might also develop in areas with poor air circulation or in areas where there is a lot of dust and dirt that might provide a food source for mold.

- Initiate repairs or resolve the problem as soon as possible. If the problem cannot be

resolved quickly, salvage the collections as directed below and develop a strategy for frequent monitoring of the area for additional mold growth.

2. Take steps to modify the environment so that it is no longer conducive to mold growth.

- Mop up and/or use a wet-dry vacuum to remove any standing water. Bring in dehumidifiers, but be sure that a mechanism is in place to drain them periodically so they do not overflow. Bring in fans to circulate the air, and open the windows (unless the humidity is higher outside).

- Your goal should be to reduce the relative humidity to 55% or lower. Temperature should be moderate, below 70°F. Get a monitoring instrument that can measure the relative humidity and temperature accurately, and record the measurements in a log several times a day. Do not rely on your own impression of climate conditions.

3. Implement safety precautions for staff and others working with moldy items.

- A mycologist should be consulted to insure that no toxic mold species are present (a local hospital or university should be able to provide a reference). If toxic molds are present, DO NOT attempt to salvage materials yourself.

- If there are no toxic molds present, collections can be salvaged in-house, but everyone working with the affected materials must wear disposable plastic gloves and clothing, and use a protective mask when working with moldy objects.

- Use a respirator with a HEPA (high efficiency particulate) filter; pollen dust masks available in drug and hardware stores are not adequate. If you cannot use disposable clothing, be sure to leave dirty clothes in a designated area and wash them in hot water and bleach. Respirators should be wiped periodically with rubbing or denatured alcohol.

- Be aware that some people cannot wear respirators. The respirator must fit well with good contact around the nose and mouth area. In addition, they make breathing somewhat difficult and can be problematic for people with asthma or heart conditions, or people who are pregnant. It is a good idea to consult your doctor before wearing a respirator to work with moldy materials.¹

4. Isolate the affected items.

- Quarantine items by removing them to a clean area with relative humidity below 45%, separate from the rest of the collection. Items should be transferred in sealed plastic bags to avoid transfer of mold to other items during the move, but they should not remain in the bags once in the clean area, since this will create a micro-environment that can foster further mold growth.

- In the case of a large mold outbreak it may be impractical to move the items; in that case the area in which they are housed should be quarantined and sealed off from the rest of the building to the extent possible (remember that this includes shutting off air circulation from the affected area).

5. Begin to dry the materials. Your goal is to make the mold go dormant, so that it will appear dry and powdery rather than soft and fuzzy. This will allow you to remove the mold residue more easily.

- Wet material should be dried in a cool, dry space with good air circulation. An air-conditioned space is the best for this purpose, but if that is impossible, use fans to circulate air (do not aim fans directly at objects, however, as this can damage materials and further scatter mold

spores). Place paper toweling or unprinted newsprint (regular newspapers may transfer print to the wet objects) under the drying items to absorb moisture, and change this blotting material often. Air drying takes time and attention, since you must check drying materials often, and you must maintain cool, dry conditions and air circulation in the space.

- Collections may also be dried outside in the sun (sunlight or ultraviolet light can cause some molds to become dormant). The outside humidity must be low. Be aware that the sun causes fading and other damage to paper-based collections, however. Materials should be monitored closely and left outside no more than an hour or so.

- Special attention should be paid to framed objects (such as prints and drawings) and to the interior of the spines of books. A frame provides an ideal environment for mold; the back is dark, air does not circulate, and humidity can be trapped inside. Similarly, the interior of the spine of a book is particularly vulnerable to mold growth. Spines should be checked regularly during the drying process. Framed materials should be unframed immediately, and dried as above. If the item appears to be stuck to the glass in the frame, remove the backing materials from the frame and leave the item in the frame and attached to the glass. Place the framed item in a cool, dry space as described above, and consult a professional conservator.

6. If immediate drying is not possible, freeze the affected items.

- If the item is small enough, it can be placed in the freezer compartment of a home refrigerator, with freezer paper loosely wrapped around it to prevent it from sticking to other items.

- For items that are too big for a freezer compartment or for larger numbers of items, a commercial freezer may be necessary (grocery store, university food service, commercial cold storage facility, etc.). It is a good idea to make arrangements for commercial freezer storage before an emergency arises, since there may be restrictions on storing moldy items in a freezer that normally holds foodstuffs.

- Once time and resources are available, frozen materials can be thawed and dried in small batches, or they can be freeze-dried or vacuum freeze-dried (with the exception of photographs, which should not be freeze-dried or vacuum freeze-dried).

7. Clean the affected items. DO NOT try to clean active mold (soft and fuzzy) yourself. This should be done only by a conservator, who will use a vacuum aspirator to avoid further embedding the mold into the paper. The following instructions apply only to inactive (dry and powdery) mold and materials that do NOT have artifactual value: 2

- Remove mold residue outdoors rather than in an enclosed space whenever possible. Be sure to wear protective gear (see above). If you must work indoors, use a fume hood with a filter that traps mold or in front of a fan, with the fan blowing contaminated air out a window. Close off the room from other areas of the building (including blocking the air circulation vents).

- Vacuum the mold. Use a vacuum with a HEPA filter; this will contain the mold spores. A normal vacuum will simply exhaust the spores out into the air. You can also use a wet-dry commercial-strength vacuum if the tank is filled with a solution of a fungicide such as Lysol diluted according to the label instructions. A tube from the hose inlet should extend into the solution so that incoming spores are directed there.

- Do not vacuum fragile items directly, since the suction can easily cause damage. Papers can be vacuumed through a plastic screen held down with weights. A brush attachment covered with cheesecloth or screening should be used for books to guard against loss of detached pieces. Boxes can be vacuumed directly. When disposing of vacuum bags or filters, seal them in plastic trash bags and remove them from the building.

- It is also acceptable to clean off mold with a soft brush, but this must be done carefully. Once moldy material is dry and the residue appears powdery, take a soft, wide brush (such as a watercolor wash brush) and lightly brush the powdery mold off the surface of the item. This should be done outside or the mold should be brushed into a vacuum nozzle. Be careful not to rub the mold into the surface, since that will attach it permanently to paper fibers or the cover of a book.

8. Dry and thoroughly clean the room(s) where the mold outbreak occurred. You may do this yourself or hire a company to provide dehumidification and/or cleaning.

- Vacuum shelves and floors with a wet-dry vacuum filled with a fungicide solution such as Lysol, then wipe them down with Lysol or a similar solution. Allow them to dry fully before returning any materials. If a musty odor lingers in the room, open containers of baking soda may help.

- It is also a good idea to have the HVAC system components (heat-exchange coils, ductwork, etc.) cleaned and disinfected, particularly if you suspect they have caused the problem.

9. Return materials to the affected area. Do this ONLY after the area has been thoroughly cleaned AND the cause of the mold outbreak has been identified and dealt with.

10. Continue to monitor conditions and take steps to avoid additional mold growth.

- Take daily readings of temperature and relative humidity, and be sure that the climate is moderate. It is particularly important to keep humidity below 55% to insure that mold will not reappear. Temperature should not exceed 70°F.

- Check problem areas frequently to insure that there is no new mold growth. Be sure to examine the gutters of books near the endbands and inside the spines.

- Keep areas where collections are stored and used as clean as possible, since dust and dirt are a source of spores, both active and dormant. Clean floors with a HEPA filter vacuum rather than sweeping, since sweeping scatters dust. House collections in protective enclosures whenever possible to keep them free of dust. Vacuum shelves and the tops of unboxed, shelved books, or clean them with a magnetic wiping cloth.

- If funds permit, install a multi-stage particulate filtration system in the building or storage area.

- Keep windows closed to prevent active spores from entering, and prohibit live plants in collection storage or use areas, since these are also a source of spores.

- Quarantine new acquisitions for a few days, and check them carefully for signs of mold.

- Avoid storing collections in potentially damp areas or in locations where water accidents are possible. Insure that regular maintenance is carried out on the building to reduce the chance of water emergencies.

- Regularly inspect the HVAC system, which is a good breeding ground for mold. Regularly clean the heat exchange coils, drip pan, and ductwork. Change air filters frequently.

- Prepare a disaster plan. This will prevent some accidents and provide strategies for dealing quickly and effectively with problems. Be sure that all employees are familiar with the plan.

DEALING WITH A MAJOR MOLD OUTBREAK

If a large portion of the collection is affected by the mold outbreak, if dangerous species of mold are present, or if the HVAC system and the building itself are also infected with mold, outside assistance will be needed. Particularly in the latter cases, it is essential to make sure that the building is safe for occupancy by staff. There are a variety of companies experienced in working with cultural collections that can assist institutions with recovery.

Most of the disaster recovery companies that provide drying services will also clean surface mold off collections. Conservators or regional conservation centers provide treatment services for individual items with artifactual value.

There are also several disaster recovery companies that specialize in dehumidifying and cleaning of buildings. In the case of a severe infestation of mold and/or an infestation that poses serious health risks to staff, companies specializing in indoor air quality can help to insure that the building is safe for occupancy. In severe cases, fumigation of the affected area may be necessary. Due to the potential for damage, fumigants should not be used directly on or in the presence of collections unless there is no other choice. Fumigation should always be done by a licensed professional.

A list of service providers is given at the end of this leaflet. Be sure that the company you choose is familiar with the requirements of cultural collections. If you are not sure how to choose a service provider, always contact a conservator or preservation professional for advice.

SUMMARY

Spores, active or dormant, are ubiquitous. Although it is impossible to get rid of all the spores, mold growth can be controlled. Most important for mold control is maintaining RH conditions below 55%, or, better, below 45%. Use of protective enclosures, meticulous housekeeping, monitoring of RH and temperature, and a watchful eye are also important. If resources allow, high-level filtration of storage areas, if not of the whole building, is recommended. Protecting library and archival collections from water accidents should be among the highest priorities for any institution. Wet collections must be immediately dried or stabilized by freezing. Moldy materials must be isolated, dried if wet, then cleaned using the strictest precautions.

NOTES

1. Hilary Kaplan. "Mold: A Follow-up." Available on-line at <http://palimpsest.stanford.edu/bytopic/mold>.

2. For these and other cleaning suggestions, see Lois Olcott Price, *Managing a Mold Invasion: Guidelines for Disaster Response*. (Philadelphia, PA: Conservation Center for Art and Historic Artifacts, 1996). CCAHA Technical Series No. 1.

SOURCES OF SUPPLIES AND SERVICES

This list is not exhaustive, nor does it constitute an endorsement of the suppliers and services listed. We suggest that you obtain information from a number of vendors so that you can make comparisons of cost and assess the full range of available products and services.

A more complete list of suppliers is available from NEDCC. Consult the Technical Leaflets section of NEDCC's website at www.nedcc.org or contact NEDCC for the most up-to-date version in print.

Munters Corporation
Headquarter Region Americas

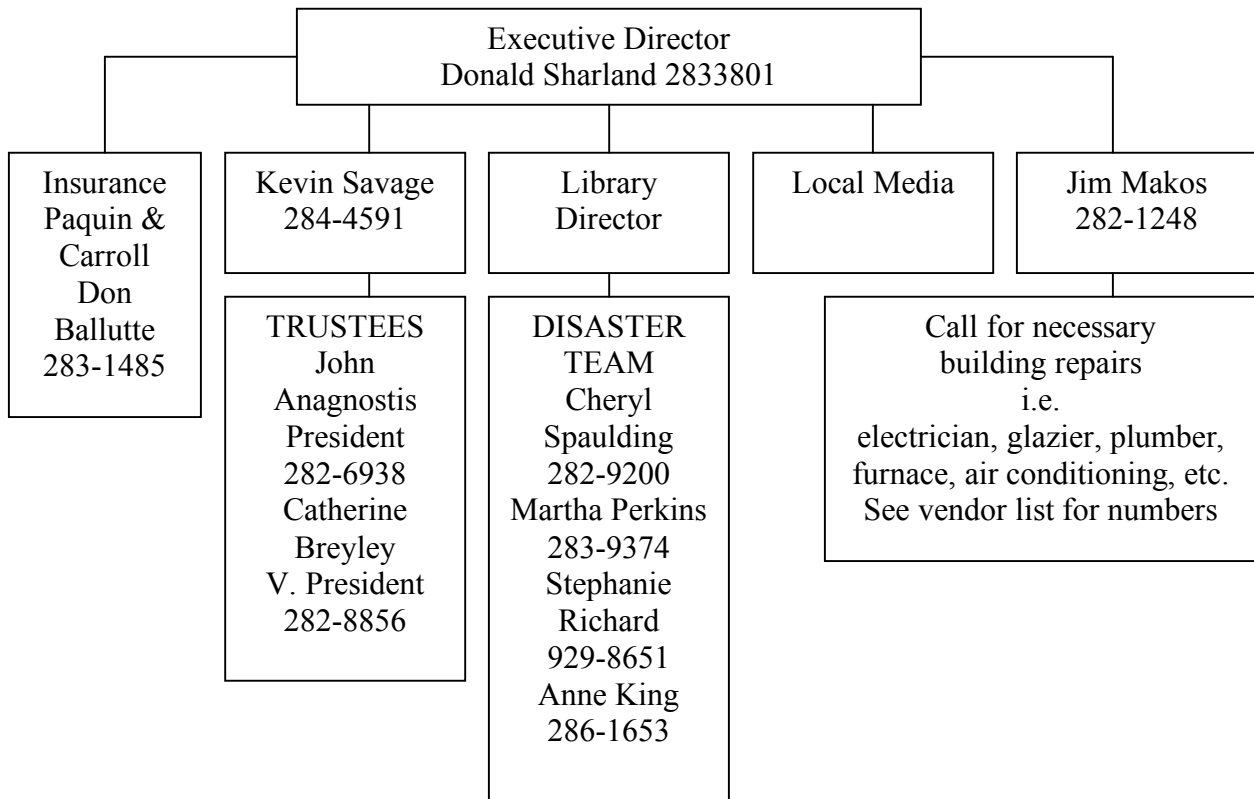
• Dyer Library Saco Museum •

79 Monroe Street
PO Box 640
Amesbury, MA 01913
Toll-Free: (800) 686-8377 (24-hr.)
Telephone: (978) 241-1100
Fax: (978) 241-1219
E-mail: muntersinfo@muntersamerica.com
<http://www.munters.us>
Dehumidification, cleaning of interiors

Last Updated: August 25, 2004

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APPENDIX A
• PHONE TREE •
[revised November 2005]



• **Disaster Team Phone Tree** •

Executive Director: Calls Insurance company, Treasurer, Library Director, Building Overseer. Must contact local paper for positive press and keeping community informed

Library Director. Responsible for calling Disaster Team. Disaster Team may notify its support staff.

Treasurer: Responsible for contacting President and Vice President of Board. These people may then contact other trustees. Treasurer's role is to release emergency funds.

Building Overseer: Responsible for calling appropriate people for necessary repairs (plumber, electrician, furnace, glazier, etc.)

**APPENDIX B
CLIENT/RESOURCE/COMPANY LIST (prefix 207)**

Numbers should be checked, updated or revised once a year—last update Nov. 2005

List #1

Mechanical System	
Air Conditioner (Haley's Metal Shop/Total Comfort)	284-8571
Heating/Plumbing (Gilbert & Son Plumbing & Heating)	284-6257
Building Overseer Jim Macos	282-1246
Custodian Gerry Chatigny	284-4370
Computer Emergency	
Macintosh—Micro Gorham	284-8020
Dell	1-800-624-9896
Gateway	1-800-211-4952
Copier Service (BEU)	878-8500
Disaster Assistance (NEDCC)	978/470-1010
Electrician (Joe Graves Electric)	283-1439
Earl W. Noyes & Sons	1-800-341-7576
Exterminator (Expert Pest Control)	874-9009
Extinguisher service (Lindy Fire Equipment)	284-4247
Thermo King Transport Refrigeration (Jim Hennison)	775-6328
Freeze Dry Service (Munters)	800/797-5020
Freezer Facilities (IDEXX - Nelson Hills)	856-0300
Paquin & Carroll Insurance (Donald Bollutte)	283-1486
Legal Adviser (Jim Molleur)	283-3777
Locksmith (Dupuis Hardware Locksmith)	284-8702
Rennie Security	282-4041
Utility Companies	
Heating: Union Oil	284-2533
Phone Systems (York Telephone)	363-8200
Biddeford/Saco Water Company	282-9141
Saco Ambulance	Emergency 9-1-1
Saco Fire Department	Emergency 9-1-1-/non-emergency 282-3244
Saco Police Department	Emergency 9-1-1-/non-emergency 284-4535

**APPENDIX B
CLIENT/RESOURCE/COMPANY LIST**

Numbers should be checked, updated or revised once a year—last update Nov. 2005

List #2

Freezer or Wax Paper, Paper Towels, etc. (Resource Net Int'l.)	772-8434
Metal Book Trucks (SMLD)	871-1765/66
<i>(NOTE on book trucks: Contact other libraries to loan)</i>	
Plastic Milk Cartons (Oakhurst Dairy)	772-7468
Plastic Sheeting (Plastic Supply Co.)	775-7778
Portable generator, sump pump, lighting, electric fans and extension cords: Handyman Equipment Rental Company	773-2600
Taylor Rental in Biddeford	282-5104
Refrigerator Trucks (Thermo King Transport Refrigeration)	775-6328
Water Damage Recovery Services: Munters Incentive Group	800-797-5020

APPENDIX C LOCATION OF SHUT OFF VALVES

NOTE: All shut off valves and switches are clearly tagged in basement. Be sure to give staff a tour of the building and show where the shut off valves and emergency switches are, as well, where fire extinguishers and flashlights are kept. Staff must also know where keys are to access these areas.

LOCATIONS

Emergency Switch to Boiler Room

Outside Furnace Room, top left of door frame

Main Power Switch & Main Water Shut Off Valve

Main Power Switch is in basement and far right wall (Main Street).

It is clearly labeled. There are two Main Power Switches.
Water Shut Off Valve is the same area but opposite of Maine Power Switches.
It is clearly tagged.

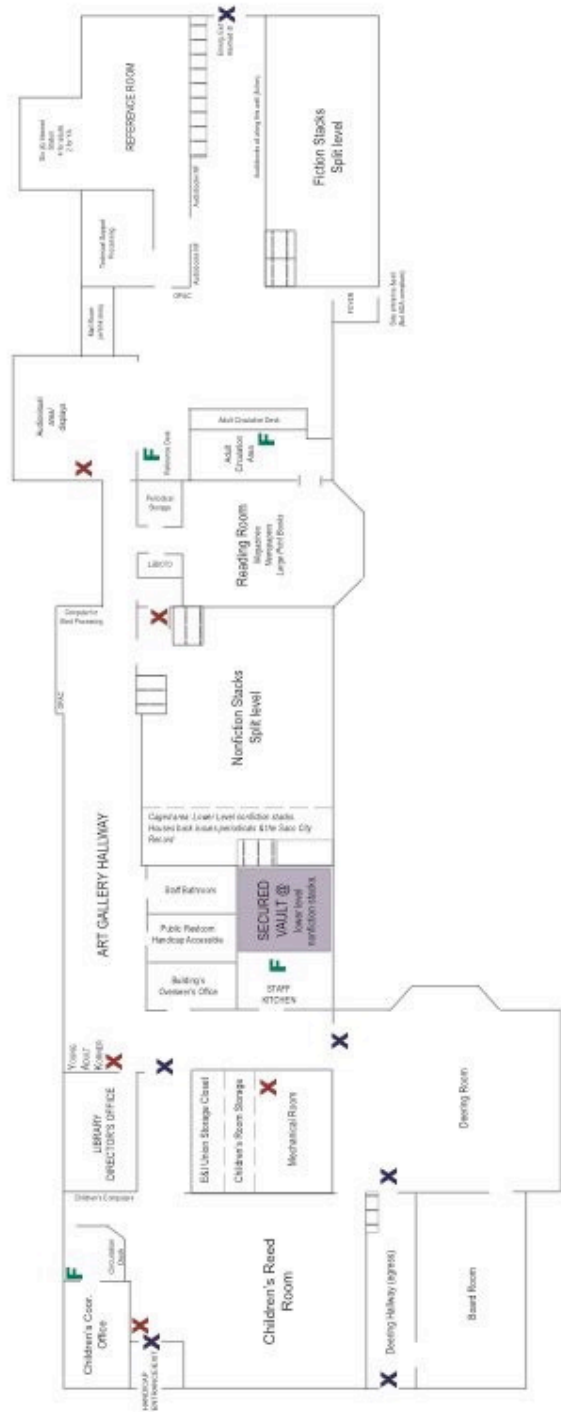
Emergency Auxiliary Lights

- Adult Circulation Desk, to left, above bulletin board
- YA area, outside Library Director's office
- Children's Room
- Inside Deering Room
- Deering Room Hallway exit door.
- Outside Administrative Office on Second floor
- At bottom of stair well from second floor.

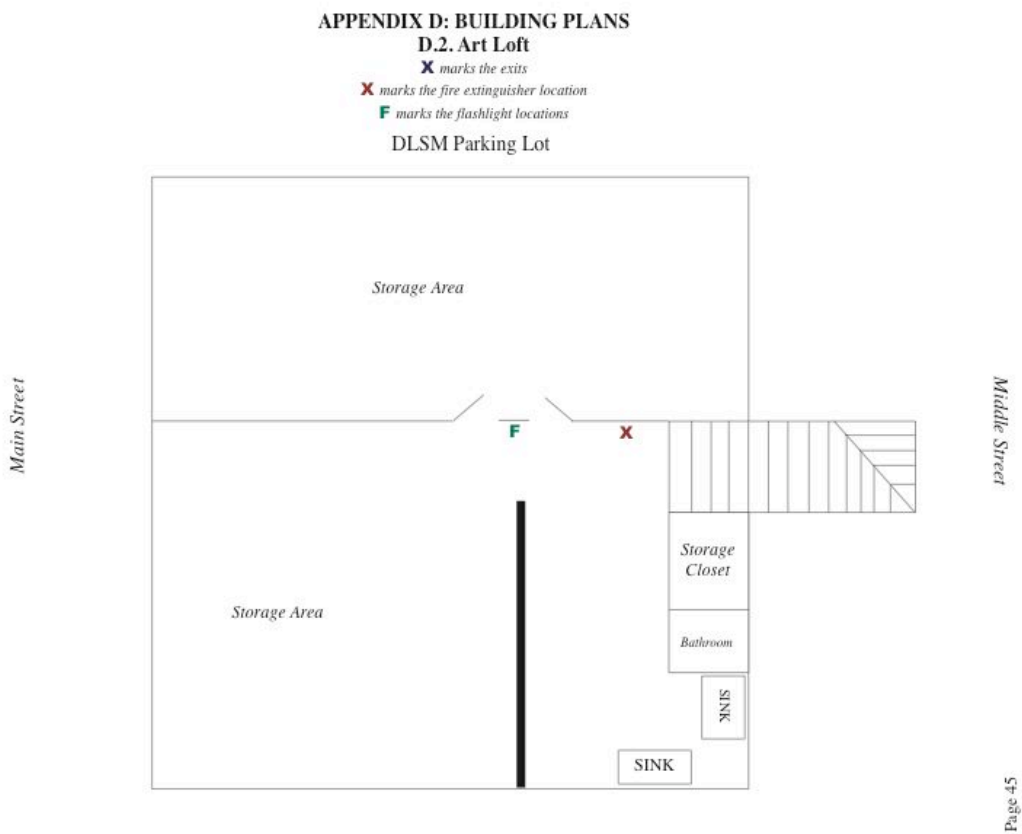
APPENDIX D.1
Main Floor showing both wings

APPENDIX D: BUILDING PLANS
D.1. Dyer Library Main Floor (showing both wings)

X marks the exits
X marks the fire extinguisher location
F marks the flashlight locations



APPENDIX D.2
Art Loft



APPENDIX D.3

Floor Plans - Second Floor

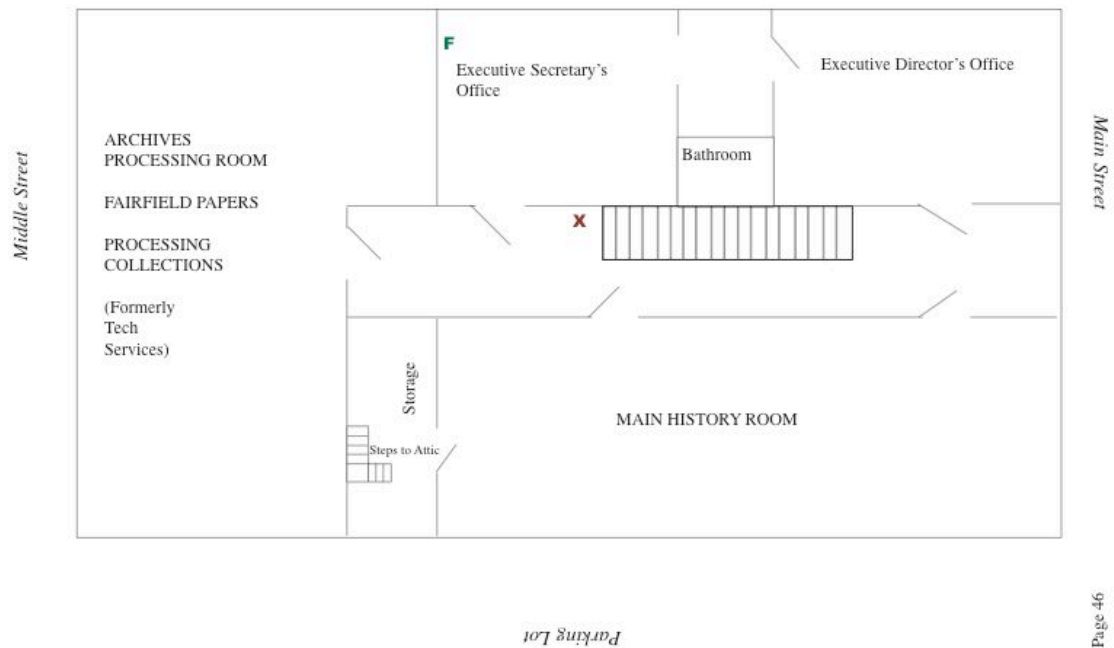
APPENDIX D: BUILDING PLANS

D.3. Second Floor (front wing)

X marks the exits

X marks the fire extinguisher location

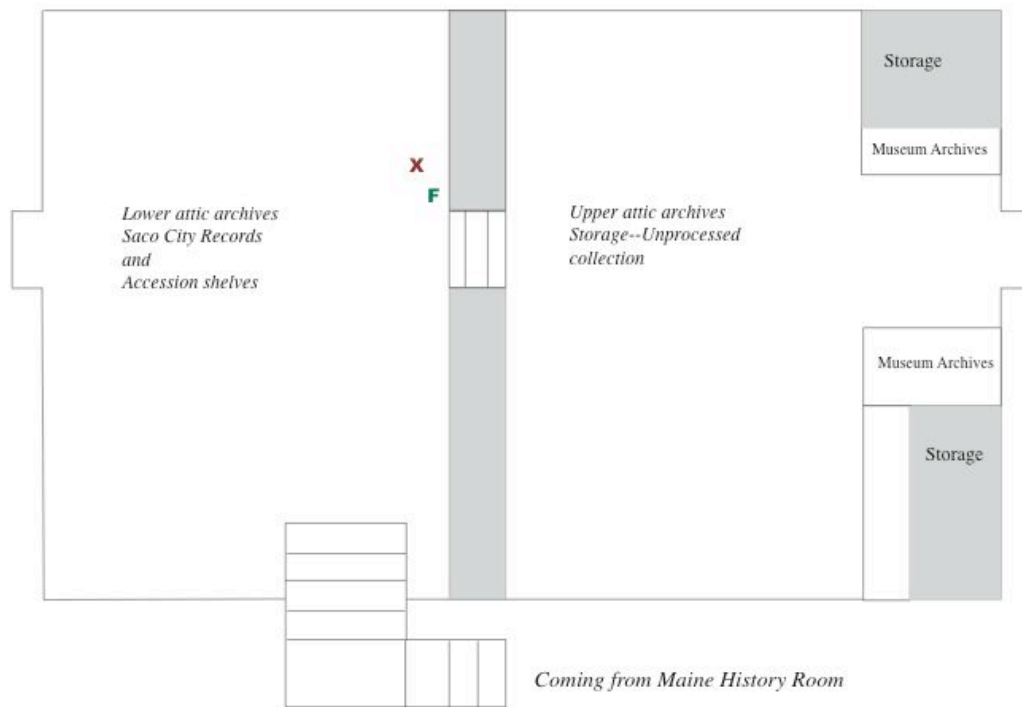
F marks the flashlight locations



APPENDIX D.4
Floor Plans - Archives (Lowe/Upper Attic)

APPENDIX D: BUILDING PLANS
D.4 Dyer Library • Archives Storage • Lower/Upper Attics (3rd Floor/front wing)

X marks the exits
X marks the fire extinguisher location
F marks the flashlight locations



• Dyer Library Saco Museum •

APPENDIX E

Appraisal List of Special Collections and Archives
[To be added in later]

APPENDIX F

DYER LIBRARY EMERGENCY SAFETY CHECKLIST

Inspector: _____

Date: _____

When a problem condition exists, please describe and indicate location.

Fire Extinguishers

- ☐ Reading shows low pressure, discharged, or damage
 - ☐ Type not labeled.
 - ☐ Not accessible.
 - ☐ Thought needed, but not there.
 - ☐ Other _____
- _____
- _____

Fire Exits & Corridors

- ☐ Blocked
 - ☐ Glass broken on emergency exits
 - ☐ Warped or sticking doors
 - ☐ Locked doors
 - ☐ Other _____
- _____

Fire • Other

- ☐ Insufficient "No Smoking" Signs
 - ☐ Flammable liquids not properly stored/dangerous chemicals exposed
 - ☐ Check Fire Alarm Panel. Are any system failure lights on?
 - ☐ Other _____
- _____

Electrical Equipment

- ☐ Worn or exposed wiring
- ☐ Electrical equipment not grounded (all 3-prong outlets)
- ☐ Open light sockets
- ☐ Burned out lights
- ☐ Circuit boxes "hot" to touch
- ☐ Overloaded sockets
- ☐ Other _____

Tripping and Other Impact Danger

- ☐ Electrical cords in dangerous position
- ☐ Loose flooring
- ☐ Other potential tripping hazard
- ☐ Slippery floor
- ☐ Unstable furniture
- ☐ Books or boxes dangerously piled (too high, etc.) or blocking means of access/egress
- ☐ Other _____

Other






- ☐ Water Pipes Leaking
- ☐ Leaks coming into building from window or doors or ceilings
- ☐ Chipped or broken glass
- ☐ Locks on doors not working properly
- ☐ Outside lights not working
- ☐ Other _____

APPENDIX G
SUPPLY LIST FOR SALVAGE PROCEDURES
The library should have these items in storage

Plastic Sheeting
Scissors and or paper cutters
Heavy duty Tape (duct tape for attaching plastic sheeting to shelves or tables)
Paper Pads, Pencils, Waterproof Pens
Buckets, Sponges, Plastic Boots
Plastic Garbage Bags
Boxes or plastic crates for transporting wet items
Sealing tap
Wax or Freezer Paper, Paper Towels, and Unprinted newsprint
Polyester Wire (3 mil or heavier fishing line)
Blotting Paper
Weights (may be paper or plastic or aluminum foil covered brick)
Bookends and Bookcarts
Clothesline and clothespins
Cotton Gloves
Dust cloths ("Dust Bunnies")
Vacuum Cleaner and Wet Vac
Dehumidifiers and Fans

NOTE: Salvage supplies should be kept in Maintenance closet.

APPENDIX H
Photographs identifying shut off values and power to building

		
Electrical Panel in Building Overseers Office. These breakers are for the Deering Wing of the Building	Electrical Panel located at the bottom of stairwell that takes you up to lower attic on 2nd floor. Enter this area from the Maine History Room Office.	These two panels are the main breakers that will cut power from the building. They are located in the basement, over from the far right wall (Main Street side of building)
		
This is the main water shutoff valve. Located opposite the main breakers.	Fire Alarm Panel. Eight zones identified. Periodically check to make sure Fire Alarm Panel is functioning properly	

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