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INTRODUCTION

As the title suggests, the 2012 edition of the *Disaster Recovery Manual for Collections* is a departure from previous disaster manuals in the MSU Libraries. Previously, all editions of the Disaster Manual covered information and procedures in the event of disasters, including water, fire, tornadoes, bombs, toxic spills and disruptive behavior to name a few. Since the responsibility of the Disaster Recovery Committee is primarily responding to water emergencies in the collections, the 2012 edition deals only with water emergencies and collapsed shelves leaving the other emergencies to a new Library safety/emergency committee that is being formed in conjunction with University wide emergency response. Access to the Disaster Recovery Manual for Collections is available electronically on the MSUL website at: http://www.lib.msu.edu/preservation/disaster.jsp

Associate Director Peter Berg, who is also head of Special Collections and Acting Preservation Librarian, is chair of the Disaster Recovery Committee, a library wide committee committed to the planning for and response to any water emergencies in the MSUL. The Disaster Recovery Committee works in close partnership with the MSUL Facilities to help prepare the MSUL in case of emergency.
WATER DISASTER IMMEDIATE ACTION PLAN FOR MAIN LIBRARY EMPLOYEES

1. REMAIN CALM. Personal safety comes first. Never enter a flooded area until you are confident there is no electrical or toxic hazard.

2. CALL CIRCULATION DESK: 5-2333
   - Provide the following information:
     - Your name, phone number, and location
     - Nature and size of disaster and exact location affected by water
   - CIRC will then call the appropriate service personnel to remedy the situation.
   - CIRC staff will call the Disaster Recovery Chair who will then alert committee members.

3. Remove appropriate supplies from the DISASTER BARREL:
   - If water is coming from ceiling on to books or anything that might be damaged by water, throw plastic sheeting over the area.
   - If a plastic wastebasket could catch drips place it appropriately under the leak.
   - If water is on floor put down gator tails to keep it contained.
   - Cordon off the affected area with “Do Not Enter” tape.

4. Follow your Unit’s procedures for contacting a full time Library Staff Member to inform them of the situation.
1. **REMAIN CALM.** Personal safety comes first. Never enter a flooded area until you are confident there is no electrical or toxic hazard.

2. **CALL LIBRARY CIRCULATION DESK:** 5-2333
   - Provide the following information:
     - Your name, phone number, and location
     - Nature and size of disaster and exact location affected by water
   - CIRC will then call the appropriate service personnel to remedy the situation.
   - CIRC staff will call the Disaster Recovery Chair who will then alert committee members.

3. **GO TO THE DISASTER BARREL** and remove appropriate materials:
   - If water is coming from ceiling on to books or anything that might be damaged by water, throw plastic sheeting over the area.
   - If a plastic wastebasket could catch drips place it appropriately under the leak.
   - If water is on floor put down gator tails to keep it contained.
   - Cordon off the affected area with “Do Not Enter” tape.

4. Follow your Unit’s procedures for contacting a full time Library Staff Member to inform them of the situation.
LINES OF AUTHORITY

Circulation staff is trained to respond to various kinds of emergencies and is the first to be contacted when an emergency occurs. However, policies and procedures have been established which designate the following persons as those who have authority to make major decisions such as closing the building.

The names are listed in the order they are to be called in the event of any major emergency such as fire, power failure, tornado, and bomb threats. If you cannot reach the first person on the list (the Director), continue down the phone list until you reach someone with authority.

**WORK**

- **Cliff Haka** ........................................... 355-2341  
  Director of Libraries
- **Jim Hensley** ........................................... 884-6388  
  Head of Facilities Support
- **Colleen Hyslop** .................................... 884-6390  
  Senior Associate Director
- **Arlene Weismantel** ................................. 884-6447  
  Assistant Director
- **Peter Berg** ............................................ 884-6396  
  Associate Director
- **Kriss Ostrom** ......................................... 884-1943  
  Head of Circulation
- **Steve Sowards** ....................................... 884-6391  
  Associate Director
- **Nancy Fleck** .......................................... 884-6455  
  Associate Director
- **Shawn Nicholson** ................................. 884-6448  
  Assistant Director

**DISASTER RECOVERY COORDINATOR:** To be contacted immediately if collections are affected or endangered in any way. Contact members of the Disaster Recovery Committee if necessary.

- **Eric Alstrom** ....................................... 884-0905  
  Head, Conservation & Preservation

**MANAGER, OFFICE OF RISK MANAGEMENT AND INSURANCE:**  
Must be called for advice regarding insurance documentation, ASAP.

- **Bobbi Boland** ...................................... 355-5022

**FIRE PREVENTION, OCCUPATIONAL SAFETY OFFICER, DPPS:**

- **Lt. Sue Busnardo** ................................. 353-5362
DISASTER RECOVERY ASSESSMENT

In all emergencies that affect the condition of the library collections, notify Circulation who will initiate disaster recovery procedures for collections. The Disaster Recovery team is on call for any emergency that affects library materials, and will take charge of recovery operations as soon as they arrive on the scene. They have been trained in handling wet or otherwise damaged library materials, and have access to necessary supplies, equipment, and services.

These instructions assume that the structure has been rated safe for entry for non-emergency personnel.

In the event of a disaster affecting library materials, the following steps should be taken:

1. Secure the perimeter of the affected area from unauthorized entry. Use yellow perimeter tape available from DPS, Physical Plant, or from Library Stores.

2. Delegate the following tasks as help arrives:
   - If necessary, call for additional volunteers.
   - Bring/obtain a copy of the Disaster Recovery Manual for Collections on-site.
   - Formulate a plan of action to determine activity priorities and immediate supply requirements.
     
     (1) Number of ranges/books affected
     ~ 50 books/shelf
     x # shelves per section
     x # sections in range
     = Approximate # of books affected

     (2) Approximate # of boxes needed
     Approximate total number of books affected
     ÷ ~ 25 books per recovery box
     = Approximate # of recovery boxes needed

     (3) Condition of stacks – braced or leaning
     - Obtain the list of rare/valuable/fragile materials for the site you are working at. These materials should be addressed first.
     - Obtain supplies from the Disaster Recovery barrel. Fans, wet-dry vacs, and other supplies are available as required.
MSU Libraries Disaster Recovery for Collections

• Appoint person to meet and direct staff and supplies.
• Set up teams to sort and deal with different material types - i.e. books, maps, papers, and computers.
• Establish a production line to handle different types of materials.
• Train volunteers on the spot.
RECOVERY PROCEDURES FOR WATER DAMAGE

The following describes recommended procedures and techniques used in collections recovery.

LEAKS AND WATER DAMAGE

Do not enter an area if there is any danger of electrical shock. Report all water problems to Circulation (5-2333) and the Main Office (5-2341). Remain in the vicinity of the problem and keep others from entering any dangerous or flooded area.

WATER DAMAGE

Wet paper is extremely fragile and may tear at a touch. Any wet material should be handled as little as possible.

Moist paper combined with warmth provides an ideal condition for the growth of mold. In order to prevent mold from developing it is absolutely essential to stabilize water-damaged materials within 48-72 hours. Weather is critical. When it is hot and humid 48 hours is the maximum safe period. When weather is cold a bit more time can be taken, but should not go beyond 72 hours. Mold will not grow without warmth and exposure to air. Damp books are even more susceptible to mold than wet ones.

All books, even those apparently dry, should be removed from the affected area and examined carefully. They should be stored in an area with good air circulation, air conditioning and with low humidity. All books should be thoroughly dry and be checked for mold before they are returned to their places.

As soon as area has been declared safe by the Fire Department, DPS Safety Officer, or Library administrator:

1. Secure the area, cordon off the affected ranges in order to prevent possible injury to staff and patrons.

2. Stabilize Environment

   • In winter open windows and doors to lower temperature as much as possible but not below 32 degrees F. Have Physical Plant shut off heat if possible. Circulate air with fans.

   • In summer request Physical Plant to lower temperature as much as possible. Circulate air with fans.
Try to lower humidity as rapidly as possible. Bring in de-humidifiers. Mop up water as soon as possible after source of water damage has been located and incoming water stopped.

3. Survey extent of damage. Make notes describing the scene, including number of ranges and approximate number of books affected, condition of the stacks (braced or leaning). This is a good time to photograph the scene if a camera is available.

4. Formulate a plan of action and determine immediate supply needs and action priorities:
   - Delegate responsibilities
   - Appoint a person to meet and direct arrivals of off-site supplies and personnel
   - Appoint a person to secure the perimeter from sightseers
   - Set up a central communications post

5. Make arrangements for equipment and supplies.

6. Make arrangements for additional staff to help in removing wet materials from area.

7. Retrieving materials
   - If there has been a fire, warn staff to watch for hot spots. Always feel something before opening. If hot, call a fire fighter.
   - Never retrieve items if it means endangering life or other material.
   - Establish a location for wrapping and packing wet materials into crates or boxes. Move tables into area to provide work surfaces. Cover tables with plastic.
   - Establish a human chain from the location of books to the wrapping and packing site. If distance is too far for human chain, establish book truck convoys to move materials (cover trucks with plastic).
   - A team member should be at the head of the chain. This team member should make rough priority and sorting decisions regarding treatment to follow:
     a) Separate coated from non-coated materials.
     b) Separate books that are so wet that they need interleaving from damp books that can be air-dried.
     c) In a disaster involving hundreds of volumes the decision to freeze or air dry may best be made here, directing books to two separate processing chains.
The salvage team leader should not become personally engaged in tasks, which do not permit movement from place to place.

8. Priorities for moving material from area.
   - If area has previously established priorities, follow them.
   - If books have fallen from shelves and are lying in water, retrieve these first. Water on floor should be removed as rapidly as possible to reduce humidity.
   - Remove coated books before others.
   - Remove any boxes of materials from floor.
   - Remove wettest books next. This will also aid in reducing humidity.
   - Soaked carpet should be removed promptly. If carpet lies under shelving ranges it must be cut.

9. Precautions
   - Books that are to be frozen should be kept closed to minimize warping.
   - Books with coated paper should not be allowed to dry out until they are interleaved or frozen. It is better to allow them to stay wet if they cannot be stabilized promptly.
   - Do not empty cardboard boxes if they are very wet. Freeze as is.
   - Always remember that reducing the cost of future restoration must be one of the top priorities of the salvage operation.

10. Washing muddy or dirty books. (This is rarely possible because of lack of time).
    - No untrained person should ever be allowed to wash water-damaged materials.
    - Never wash books if time is critical.
    - Never UNDER ANY CIRCUMSTANCES wash material that contains water-soluble materials such as non-permanent ink, watercolors, tempura, etc.

FREEZING MATERIALS
1. Suggested priority for freezing
   - Materials that have developed mold
Leather and vellum bound volumes
Manuscripts and art on paper stock
Materials on coated stock
Journals & monographs on non-coated stock

*Do not freeze microfilm, microfiche, or color slides unless they cannot be dried professionally. If material has to be frozen it should be done as rapidly as possible.*

2. Purpose of Freezing

- Stabilization by freezing buys time. After freezing, decisions can be made about determining which items to replace rather than restore.
- Freezing stabilizes water-soluble materials, such as inks, dyes, etc.
- Freezing is not a drying method, nor will it kill mold spores, but it will keep spores dormant.

3. Packing materials for freezing

- If cardboard boxes are used, line with plastic or freezer paper.
- Wrap each book in freezer paper to prevent items from sticking together. Leave the tops and bottoms of books unwrapped to facilitate drying.
- Books should be wrapped and packed in the best shape and condition possible. However, if misshapen and warped item cannot be put into better shape without damage, wrap and freeze as is.
- Pack books SPINE DOWN, or on the side, never fore-edge down.
- Do not pack material too tightly.
- Packaged material waiting transportation to freezers should be kept at 4 degrees F or below in order to prevent mold growth.

4. Shipping Frozen Materials

- Load boxed material onto wooden pallets or skids if available for ease in transportation and to provide air spaces under boxes. Trucks should be backed up to loading dock.
- Load material in truck so that air can circulate between containers.
• Include instruction that materials should be frozen rapidly at the freezer facility to -20 degrees F. or below to create the smallest possible ice crystals.

**UNSAFE AREAS**

If an area that has been declared unsafe to enter contains material that has been previously identified as being especially vulnerable to destruction, or is extremely valuable, it may be desirable to persuade the fire marshal or Physical Plant personnel to provide a SAFE means of access to remove these materials even though the area is still considered hazardous.

**MOLD**

If access to an area has been delayed for several days, mold development may already have started. If there is a large amount of material it may be necessary to use fungicidal fogging. A professional fumigator should do fogging.

Consult Wallace Conservation Lab staff for advice.
RECOVERY PROCEDURES FOR COLLAPSED BOOK SHELVES

1. CLEAR AREA

Clear the area of staff and patrons near collapsed stack to insure personal safety. Rope off area immediately with yellow “caution” tape (available from Circulation, 355-2333).

If anyone was injured immediate steps should be taken to secure medical aid. Call 911, Main Office (355-2341) or Circulation (355-2333) for assistance.

2. NOTIFY THE FOLLOWING:

- Facilities Department
- Disaster Recovery Coordinator or member of Disaster Recovery team
- Stacks office/unit/group having responsibility for the maintenance of the book stacks concerned.
- Collection Area Coordinators for the affected stacks.

3. TAKE NO FURTHER ACTION UNTIL A MEMBER OF THE DISASTER RECOVERY TEAM ARRIVES TO DIRECT RECOVERY OPERATION.

METHOD FOR REMOVING BOOKS FROM COLLAPSED STACKS

In the case of a totally collapsed stack do not rush into action. Take time to plan and seek advice. First rescue books that are lying in positions which place them in stress. Work slowly enough to avoid further damage. See below for illustration.

In the case of a partial collapse, immediate action is needed.

Do not expose yourself or others to any danger of personal injury.

If the leaning stack can be firmly braced with something readily at hand, do so. But don’t waste time if the means to do this aren’t immediately at hand. Do not brace against another stack.

1. First pick up any fallen books that are in the way.
2. Place a book stool alongside the collapsing range on the side opposite the direction of the sway. Pass books to a human chain.

3. Lighten the weight which is pushing the stack in the direction of its lean or sway by removing books in this order:
   - Top shelves first
   - Shelves on the side of the sway first.
   - Shelves opposite the direction of the lean.
   - Books, which are wedged, are helping to keep the range from total collapse. **Remove these last.**
A post-mortem should be held to determine what went right and what went wrong. Reports should be written and perhaps even published in order to help others learn from our mistakes. If the plan needs to be revised, this should be done. Supply sources and facilities should be evaluated and, if inadequate, new ones should be found. Used supplies should be replaced. Each person should be thanked for his/her part in the operation.

Site inspections should continue periodically for a year to be sure that no mold has begun to grow.
APPENDIX A
PROcedures for Handling Special Materials

Photographs, Slides, Microforms

• Do not freeze microfilm, microfiche, or color slides unless they cannot be dried professionally. If material has to be frozen it should be done as rapidly as possible.

• Seal black and white negative film and prints in polyethylene bags and place in non-metal garbage cans under clean, cold running water until material can be shipped. Material can be left under these conditions for up to three days before the emulsion will separate from film backing.

• Eastman Kodak Company provides emergency service for cleaning and drying: (716) 724-4000.

• Color slides and color negatives and positive film must be sent to Kodak within 48 hours. (Eastman Kodak, 343 State Street, Rochester, NY 14650)

• Materials should be shipped to laboratory in cold water. For a trip of several hours it may be necessary to add ice (not dry ice) to keep it cold.

Framed Photographs

• Remove from frames at once so photographs will not stick to frames.

• Lay photos between blotters to dry.

Single Sheets (Paper)

• Do not attempt to separate single sheets. Normally frozen “as is” and separated later after vacuum or freeze-drying.

• Do not attempt to sponge off mold.

Materials in Drawers and Boxes (including archival storage boxes)

• Do not turn wet manuscript boxes upside down to empty, as the contents could stick to container and be torn.

• If contents are thoroughly wet, freeze contents and containers as is.
If materials are damp and will not be damaged by handling, repack into dry boxes before freezing. If in doubt, freeze boxes as found.

PHONOGRAPH RECORDS
- Remove discs from wet or damaged jackets. Always hold disks by their edges.
- Wipe discs gently with a soft, lint-free cloth and place in a rack to dry in a low dust environment. If discs are heavily soiled, wash gently in clean water (room temperature or slightly cooler) without any soap added. Air dry. Do not use paper towels. Take care that labels are not lost or damaged.

AUDIO AND VIDEO TAPES
- Rinse soil and mud off tapes. Dry within 48 hours if they include paper boxes and labels. Otherwise they can stay wet for several days.
- Do not freeze.
- Do not touch magnetic media with bare hands.
- Handle open reels by hubs or reels
- Air dry. Preservation copying may be necessary.
- Keep all labels and identifying marks with the tapes.

FLOPPY DISKS
- Avoid touching magnetic surfaces of diskettes.
- Keep wet and pack immediately. Pack vertically in plastic crate or tub.
- Air dry as soon as possible

COMPACT DISKS
- Air-dry disks immediately. Do not scratch the surface.
- If disks cannot be dried immediately, pack vertically in crates or cardboard cartons
PARCHMENT OR VELLUM

- Immediately air-dry, vacuum-dry, or freeze-dry
- Moisture causes these materials to cockle. Seek advice of professional conservator regarding flattening.

APPENDIX B
PROCEDURES FOR DRYING MATERIALS

- Costs involved with drying and restoring materials are not always justified if material is in print and is replaceable. Decisions should be made at this point before drying.

- After drying, further decisions may be made whether replacement or restoration will be needed. Replacement if possible is nearly always cheaper than restoration.

- If the water damaged material was infected by mold before freezing, it should be sent to a commercial disaster recovery company to be sterilized by fogging with a fungicide.

DRYING TECHNIQUES/OPTIONS

1) Freeze-drying and vacuum drying

Freeze-drying causes the water in materials to pass from the frozen to the vapor phase without going through the liquid phase. The moisture becomes volatile and mixes with air. Air is circulated to remove the moisture. Vacuum-drying generally is understood to mean that frozen liquid passes through a liquid state before it is removed by air absorption. Consult commercial disaster recovery companies.

2) Air-drying

The drying should be done in a large open workspace. There should be constant air circulation and dehumidification.

- Temperatures should be maintained at 65-70 degrees F (maximum) with a relative humidity of 35-45% (maximum).

- Frequent readings of temperature and humidity should be taken.

- Moisture content in the drying materials can also be measured.
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- Wet wrappings and blotting materials should be removed from the room as fast as possible in order to keep the humidity down.

- If the books are contorted, they should be remolded into shape before drying. Wet materials should be separated into small units so that air will flow freely around them. The smaller piles will also prevent crushing of the materials on the bottom.

- If the books are dirty, they should be cleaned.

- Books can be weighed at the start of the drying process in order to determine the amount of water that has been absorbed.

- Drain books by standing them on their heads (less strain on the spine) with their covers spread sufficiently to make them stand up. Styrofoam or foam rubber supports can be used to help the books stand. Their pages should not be fanned. Each book should stand on a piece of absorbent paper. These should be changed frequently and removed from the room.

- When dried sufficiently to be opened without damage, the book may be interleaved with absorbent sheets.

- When opening the books, take considerable care, keeping the opening shallow at first. Interleaving materials and absorbent papers under the books should be removed and changed often. After the interleaving has been changed a few times, the books will be almost dry. At this point they may be laid flat under moderate pressure to reduce cockling and warping.

- If desired, partially dry books may be hung over nylon lines to finish drying. (They should not be hung when very wet because they will be damaged further). Hanging will help to restore the spine to its original shape. Spines tend to become concave due to the swelling of the leaves by water and the subsequent interleaving process.

NEVER STACK DRYING BOOKS

Books should not be returned immediately to the shelves. They should be shelved in a holding area with 35-45% humidity, separate from the stack area. This area should be well ventilated and air-conditioned, with a temperature not to exceed 65 degrees F. Temperature and humidity must be adjustable. There, the books can be inspected for further repair, rebinding, or restoration needs. Random inspection for mold infestation can also take place at this time. Newly-dried materials should never be packed in boxes unattended for more than a day or two. Books should remain in the holding area at least 6 months before returning them to the main stack area. During this time,
temperature and humidity can be slowly changed to duplicate stack conditions. The books should be carefully inspected before their return to the stacks.

The shelves should be thoroughly washed with disinfectant, including the corners, bottoms, and sides of the shelves.

Do not move materials back until the shelves are completely dry and the temperature and humidity have been restored and maintained for several days. Then, the books may be reshelved in the collections.
APPENDIX C
WASHING METHODS FOR MUDDY BOOKS

The washing of materials containing water-soluble components, such as inks, water-colors, tempera, dyes used in certain maps, and the like, should not be attempted under any circumstances. Seek the guidance of an expert.

This method requires a large room with plumbing and adequate drainage.

- Install hoses feeding to bottoms of 6-8 (20 gallon) plastic garbage cans to:
  - Keep water running
  - Keep dirt overflowing out
- Keep books tightly closed (do not open books - they will fall apart)
- Gently sponge under water (Daub—do not rub or brush—this will only drive dirt deeper!)
- Move books from can to can in successively cleaner water
- Spray with fine stream of water at end of procedure
- Press out water with hands (do not use mechanical presses)
- Dry or freeze

NOTE: Do not attempt this method with open volumes, manuscripts, books printed on coated paper, art on paper, or photographs.
APPENDIX D
THE DISASTER RECOVERY TEAM

The Disaster Recovery Coordinator for the Library will normally serve as Disaster Recovery Coordinator in the event of an emergency or disaster that affects or endangers the Libraries’ collections.

The Disaster Recovery Coordinator:

• Is responsible for calling the members of the Disaster Recovery Team and works closely with the Head of Facilities Support (Jim Hensley) in acting as quickly as possible to assess the damage and direct clean-up operations.

• Is responsible for maintaining inventory records of disaster supplies and reordering when necessary in order to maintain recommended stock levels.

• Is responsible for communications, summary reports, evaluations, and follow-up assignments.

• Assists branch libraries in responding to emergencies affecting their collections, by providing manpower, supplies, and advice, as needed.

Disaster Recovery Team Members include:

• Disaster Recovery Coordinator
• Assistant Director for Access and Preservation
• Collection Conservation Technician
• Department Representatives
• Volunteers on call

Responsibilities and priorities:

1) In the event of a disaster affecting the collections, the first team member to arrive should immediately take charge until relieved by the Recovery Coordinator or the Assistant Director for Access and Preservation.

2) Appoint a person to secure the perimeter from unauthorized personnel.

3) Set up a communications and command station.

4) Assess the scope of the salvage problem.
5) Formulate a plan of action and determine immediate supply needs and action priorities. The salvage team will have the authority to appropriate supplies such as fans, trucks, etc., from all areas of the library.

6) Delegate responsibilities.

7) Appoint a person to meet and direct arrivals of supplies and personnel.

8) Set up teams with leaders, to deal with books. Train volunteers on the spot.
APPENDIX E
RECOMMENDED EMERGENCY FACILITIES & SUPPLIES

The Main Library keeps a supply of materials and equipment sufficient to deal with recovery from small or moderate disasters. However, for a larger disaster, additional equipment and supplies may be needed.

For all emergency supplies and services, on campus or off, make initial contact by calling Physical Plant at 3-1760. After hours or on a weekend contact the University Operator who will direct the call. The Physical Plant can supply from its own inventory such items as:

- Generators
- Liquid vacuums
- Trucks
- Dehumidifiers
- Water hoses
- Extension cords
- Water bank trailers
- Freezer and saran wrap
- Plastic garbage bins
- Pedestal fans
- Portable tables
- Portable pumps
- Forklifts
- Plastic crates-stackable
- Pallets
- Milk crates may be available also

The following are contacts for often-needed services or supplies in a water disaster.

Frozen Storage:
- **Main Library**, WG12
  - 16.6 cu. ft upright freezer. Holds 50-100 books

- **MSU Food Stores** (Service Road)
  - 270,000 cu. ft at −10 degrees F with moisture evacuation systems. Freezer space and plastic crates are dependent on availability.
  - Contact: Marta Mittermaier at 355-0273 x5 or Don Swanson at 355-0279

- **MSU Biochemistry Building** (on Wilson between Bogue and Farm Lane)
Freezer with capacity to hold 100-200 cartons at \(-20\) degrees F. Preferable if quick freeze is desired and if quantity is small.
- Contact: Joyce Robinson at 432-9897

Crates:
- **Target Store** 4890 Marsh Rd, Okemos 347-0700 “0”
- **Fredon Handling** 3590 Schlee, Jackson 1-800-952-0642
  - Cardboard Boxes-lined with plastic
- **B&J Moving** 484-1421
  - Can provide a supply of boxes.
- **Stevens Worldwide Van Lines** 322-2035
  - Have boxes and sell liners

Newsprint:
- Lansing Sanitary Supply

Freeze Dry Chambers:
- **Food Science Department** 5-8474
- **University of Michigan-Conservation Lab**
  - Contact Shannon Zachary, 734-763-6980
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APPENDIX F
RECOMMENDED SUPPLIES

DISASTER CLOSET SUPPLIES

A room or large closet, in an easily accessible location, should be provided as a permanent storage place for disaster equipment and supplies. Currently disaster supplies are stored in the Preservation Projects Office (WG-11) Equipment which may be useful in a disaster is kept by the Library Stock Clerk. A disaster barrel containing basic supplies is kept in each of the following areas within the Main Library building: Special Collections, DMC and the Beaumont Supply Closet that is part of Circulation.

In an emergency, the Disaster Recovery Coordinator and Disaster Response Team are authorized to appropriate supplies from anywhere in the library.

The Disaster Recovery Coordinator is responsible for maintaining an inventory and location of disaster supplies, and reordering supplies to maintain recommended stock level. The following is a list of supplies recommended for disaster response.

The following is a list of supplies and recommended amounts for a well prepared disaster response. To order disaster recovery supplies please contact the Disaster Recovery Coordinator.

<table>
<thead>
<tr>
<th>Item</th>
<th>Size/Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive tape (markable)</td>
<td>2 rolls</td>
</tr>
<tr>
<td>Absorbent water dams</td>
<td>2 cases</td>
</tr>
<tr>
<td>Barrel (55 gal)</td>
<td>1</td>
</tr>
<tr>
<td>Book Holders (cardboard)</td>
<td>10</td>
</tr>
<tr>
<td>Brooms</td>
<td>2</td>
</tr>
<tr>
<td>Caution Tape</td>
<td>2 rolls</td>
</tr>
<tr>
<td>Charcoal Briquettes</td>
<td>1</td>
</tr>
<tr>
<td>Clipboards</td>
<td>2</td>
</tr>
<tr>
<td>Cloth towels</td>
<td>1 box</td>
</tr>
<tr>
<td>Cord (clothesline type)</td>
<td>50 ft 6</td>
</tr>
<tr>
<td>Disaster Wheels</td>
<td>6</td>
</tr>
<tr>
<td>Dustpan</td>
<td></td>
</tr>
<tr>
<td>Extension cord 100 feet</td>
<td>2</td>
</tr>
<tr>
<td>Item</td>
<td>Quantity</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>First Aid Kit**</td>
<td>1</td>
</tr>
<tr>
<td>Fishing Line</td>
<td>5</td>
</tr>
<tr>
<td>Flash light-rechargeable</td>
<td>3</td>
</tr>
<tr>
<td>Freezer wrap</td>
<td>6 rolls</td>
</tr>
<tr>
<td>Garbage bags-55 gallon</td>
<td>10</td>
</tr>
<tr>
<td>Gloves (Work)</td>
<td>12 pr.</td>
</tr>
<tr>
<td>Gloves (latex)</td>
<td>2 boxes</td>
</tr>
<tr>
<td>Gloves (rubber)</td>
<td>12</td>
</tr>
<tr>
<td>I.D. stickers (volunteers)</td>
<td>50</td>
</tr>
<tr>
<td>Kitty Litter</td>
<td>1 bag</td>
</tr>
<tr>
<td>Knife-utility with blades</td>
<td>6</td>
</tr>
<tr>
<td>Lab aprons</td>
<td>5</td>
</tr>
<tr>
<td>Lab coats</td>
<td>5</td>
</tr>
<tr>
<td>Markers (permanent, lg.)</td>
<td>1 box</td>
</tr>
<tr>
<td>Masks</td>
<td>2 box</td>
</tr>
<tr>
<td>Metal Trays</td>
<td>10</td>
</tr>
<tr>
<td>Mops (sponge)</td>
<td>12</td>
</tr>
<tr>
<td>Newsprint</td>
<td>1 large box</td>
</tr>
<tr>
<td>Note pads Lined 81/2&quot;x 11&quot;</td>
<td>2</td>
</tr>
<tr>
<td>Packing Tape</td>
<td>5</td>
</tr>
<tr>
<td>Pails—10 qt.</td>
<td>2</td>
</tr>
<tr>
<td>Paper towels (single fold)</td>
<td>2 cases</td>
</tr>
<tr>
<td>Pencils -sharpened</td>
<td>2 box</td>
</tr>
<tr>
<td>Pens</td>
<td>2 box</td>
</tr>
<tr>
<td>Pink Ties</td>
<td>1 box</td>
</tr>
<tr>
<td>Plastic bucket with lid 1-5 gal.</td>
<td>3</td>
</tr>
<tr>
<td>Plastic drop cloths 12'x 12'</td>
<td>4</td>
</tr>
<tr>
<td>Plastic sheeting</td>
<td>4</td>
</tr>
<tr>
<td>Post-It Notes</td>
<td>5-10</td>
</tr>
<tr>
<td>Rescubes (collapsible plastic boxes)</td>
<td>100</td>
</tr>
<tr>
<td>Rubber gloves</td>
<td>5 pr.</td>
</tr>
<tr>
<td>*Scissors</td>
<td>5</td>
</tr>
<tr>
<td>*Sponges</td>
<td>12</td>
</tr>
<tr>
<td>“Sav-a-rap” master size (6000/case)</td>
<td>1 case</td>
</tr>
</tbody>
</table>
MSU Libraries Disaster Recovery for Collections

*Twine ................................................................. 1
Utility light .......................................................... 1
Wastebaskets (plastic, seamless 10 gal) ........... 3
Wax paper—see Sav-a-Wrap ......................... 1 case
Wet/dry vacuum ................................................. 1
Wet/dry vacuum replacement filter ............... 1
Wonder Sponge ................................................. 5
Zip-loc plastic bags, (large size) ................. 2 boxes

*Items which might be usually stocked in the Library’s general supplies need not be duplicated in a disaster closet, if their location is recorded and availability is reliable.

**First Aid Kit: suggested contents
  • First Aid instruction book
  • First Aid adhesive tape
  • Sterile gauze pads and bandages
  • Band-Aids in varying widths
  • First Aid cleansing wipe for cleaning minor wounds
  • Peroxide (disinfectant)
  • First aid cream

DISASTER BARREL SUPPLIES

Disaster barrels are kept in each branch library as well as in strategic areas in the Main Library, including Special Collections, Circulation, DMC and the Preservation Projects Office. These barrels contain the following items.

  • Bucket with lid-5 gallon
  • Clipboard
  • Disaster Manual & Disaster Response Wheel
  • Fishing line
  • Flashlight – self-charging
  • Garbage bags to fit trash can
  • Gator Tails – 4
  • Gloves-cloth
  • Gloves-rubber
  • Knife with blades-utility
  • Lab Coat
  • Masks
• Mop-sponge
• Pad of lined paper
• Pencils – 1 dozen sharpened
• Pens – 2
• Permanent markers – 2
• Scissors – 1 pair
• Sponges – 2
• Barricade Tape – “Do Not Enter”
• Packing Tape-water resistant to tape sheeting
• Paper towels-2 rolls
• Plastic sheeting-box
• Post-It notes
• Wastebasket
• Wax paper – 1 box
• Zip-lock bags
APPENDIX G
WATER DISASTER SCENARIOS

Michigan State University maintains a file of information on each building on campus, and has created a flood manual and a Master Disaster Plan that encompasses the entire campus. The following information was obtained in part from consultations with various personnel in the Departments of Public Safety and Physical Plant.

Flood from Red Cedar

The 100-year flood level is 14.42 ft. at the Farm Lane Bridge. This level was reached in 1904. The 1975 level was 11.95 and the 1947 level was 11.42. The 1985 level was about 9 ft. Water would enter the ground floor level windows on the north side of the West wing at 13.71 ft. To prevent this, the University plans calls for sandbagging at the 13 ft. level. The danger of collection damage due to Red Cedar flooding is very remote. University contingency planning is very detailed. However, the library should maintain a 24-hour watch within the building whenever the level approaches the 11.5 ft. level.

Fire

The Main Library building structure is fire resistant and is fortunate not to have experienced a major fire since its construction. It has a very limited sprinkler system confined to two areas of the Library: in the Mailroom just inside the loading dock, and in the hallway in Binding Prep. However, smoke detectors are located throughout the building and are designed to activate the alarm system.

Disaster statistics indicate that between 1980 and 1993 the greatest number of library fires originated from incendiary or suspicious causes, at a cost of $4,415,900. Over the past fifty years, deliberately set fires have accounted for as many as eighty per cent of library fires. Although fires can be set in stack areas at any time, the most vulnerable part of the building is usually the book return. The newer book return installed in the front of the library is equipped with limited fire protection features.

Mechanical Failure

Water Pipes

A water main failure would probably be confined to mechanical rooms and sub-basements. A major failure could bring escaping water into contact with steam mains, which, in turn, would cause secondary steam production, which could rise throughout
the building. Water pipes, which rise above the ground floor, are relatively small in diameter. They would probably not allow enough water to escape to rise above 1 ½” on the floors. Lowest book stack shelves are 2”-3” off the floor.

First floor water main capacity is 250 gal. per minute, second floor is 225 gal, third floor is 205 gal, and fourth floor is 50 gal.

**Air Conditioning**

Air conditioning backup has occurred in the main library several times, resulting in ceiling leaks and damaged books to 4 West and East wing.

**Electrical**

Electrical failure of itself usually does not constitute a serious danger to the collection. However, an electrical failure combined with another catastrophe that resulted in the wetting of a large section of the collection would constitute the worst possible disaster scenario. Without power to remove water, to dehumidify and to circulate air, a wet collection would mold within 48 hours. The Main Library now has a limited auxiliary power system, which will continue to operate lights, computer systems, and elevators in an emergency.

The University generates its own power. Its transmission lines are all underground and the feeder main to the Library has a back-up. Over the last 30 years, the longest campus-wide power outage lasted 5 hours (1987). The University, in the case of a failure of its own plant, has a backup feed from Consumers Power. In the case of a failure of the CP main system, the University could operate independently. Maintaining its own power plant allowed MSU's main campus to avoid losing power during the Northeast Blackout of 2003, which affected 50 million people across Canada and the United States. Nevertheless, there is always the possibility that a CP failure could be combined with a linkage failure as well, which could cause power surge damage to the University system. A simultaneous failure of both CP and the University power system would be the result. Damage to a wet collection would become irreversible if such an outage were to continue for more than a day. Such an eventuality is extremely remote.

**Structural**

Failure of building structures is a constant concern. In the Main Library and some of the branch libraries, roof leaks and minor plumbing leaks are not uncommon. Faulty air conditioning equipment often creates water problems. Any time moisture is introduced into stack areas there is a potential for mold formation. Regular inspection of stack areas, especially in the most vulnerable areas, is essential. Seasonal checks on drains will also help prevent water disasters.

**Storms**
MSU Libraries Disaster Recovery for Collections

The Main Library building can probably withstand most windstorms without damage. Shattered windows would be the most likely result if there were a direct hit by a tornado. It is unlikely, even in a major tornado, that there would be any structural collapse. However, loss of glass combined with rain and strong winds has the potential of more damage to the collection than any other cause.
INTRODUCTION 2008-09

Welcome to the updated fifth edition of the MSU Libraries' Disaster Manual. Since 2004 there have been some changes in the world of preservation in the MSUL, which need to be recognized. First and foremost is the creation of a new division, Special Collections & Preservation, which include the units of Special Collections, Wallace Conservation Laboratory, Binding, and Stacks Maintenance. Associate Director Peter Berg, who is also head of Special Collections and Acting Preservation Librarian, heads the division. As such, he is chair of the Disaster Recovery Committee, a library wide committee committed to the planning for and response to any water emergencies in the MSUL. To this end the Disaster Manual has been updated thanks in large part to the work of Nora Carr. Supplies have been updated, organized, and visits have been made to Branches to review response to water emergencies. Access to the Disaster Manual is now available electronically on the MSUL Intranet as well.

The Disaster Recovery Committee works in close partnership with the MSUL Facilities to help prepare the MSUL in case of emergency.

INTRODUCTION 2004

The fourth edition 2004 of this manual deserves an updated introduction. Since the last introduction we have had considerable turnover in staffing. The MSU Libraries no longer has an archivist on staff, nor do we presently have a preservation librarian. The coordinator of the disaster recovery committee is now a rotating chair from someone who has been on the committee for at least a year. As the Assistant Director for Access and Preservation I have taken the responsibility for updating and improving the well done manual that Dorothy Frye left when she retired. Working with the committee coordinator we have added new sections to the plan including updated maps of the branch libraries, which includes the remote storage facility. This storage is located in Lansing and in the case of a fire would be served by the Lansing Fire Department. Fortunately the storage facility is extremely close to a fire station, literally at the end of the driveway. Another key section is the new Special Collections mitigation appendix. Working with Peter Berg, Head of Special Collections, we have developed a plan for safe guarding the most valuable materials should there be an eminent threat of flooding. By the end of the year 2004 all of the Main Library building will have smoke alarms to reduce the damage of fire and an earthen berm to reduce the threat of flooding from the Red Cedar River. In 2004 we will add the position of collections conservator and that person will join the disaster committee. The addition of a collection conservator lab in Giltner Hall is also an addition to the branch libraries and remote storage section.
2002 a systems plan for disaster recovery of data and software including safe duplicate storage was also developed. While not a part of this written plan it is useful to document that plan exists. These improvements both to this disaster plan and to the facilities should help to prevent or mitigate damage to our collections.

Jeanne Drewes, Assistant Director for Access and Preservation

INTRODUCTION 1999

The first edition of this manual was compiled in 1985 by the Disaster Preparedness Project Team under the direction of the Libraries' Preservation Committee. These librarians were committed to the protection and preservation of the MSU Libraries’ rapidly growing collections as well as protecting staff and patrons in the event of fire, tornado, or other disaster. It was the first time an organized initiative was taken in the Libraries for the development of broad policies and procedures for disaster planning and emergency response, although steps had already been taken to formulate evacuation plans.

Since that time, new technology has continually shaped much of the library operation, bringing with it new challenges and new solutions. Disaster planning now requires an array of special methods for handling electronic media and equipment, for example, and at the same time, advances in the field of disaster management have brought new storage and salvage techniques. The 1999 edition of the MSU Libraries Disaster Manual has been updated to include these methods and sources of information, assistance, and supplies needed for disaster response.

This manual contains both general and specific instructions for responding to emergencies in the MSU Libraries. The appendices include policies, procedures, emergency phone numbers, supplies, training materials, and individual branch library disaster plans.

Dorothy T. Frye, Preservation Archivist for the MSU Libraries

INTRODUCTION 1985

In recent years numerous techniques for the salvage of materials damaged by fire and water have been developed and tested. Libraries have recognized the need to establish programs and procedures to aid in disaster prevention and to help minimize the effects of disasters when they do occur.

To this end, the Preservation Committee established a sub-group: the Disaster Preparedness Project Team. The team was given a charge to identify the nature of potential disasters that might befall the Library and to make a projection as to the extent
of the potential damage that would ensue. The Team was directed also to determine the current response capability of the Library and to recommend specific actions and programs that the Library could adopt. As a part of its report, the Team was instructed to prepare a disaster manual for use by the Library staff.

The Disaster Manual contains detailed procedures for handling disasters. It is to be used in conjunction with the Disaster handbook, which details the immediate steps to be taken when an emergency situation is discovered.