

Protecting Your Collections

WRITING A DISASTER
RESPONSE PLAN

PART 4: RECOVERY

JULIE PAGE – WESTPAS

Recovery Objectives

- Safety for all those working at the institution
- Reduce damage to the collections and the building (and minimize cost)
- Record damage (for insurance and record-keeping purposes)
- Stabilize the environment
- Save as much of the collection as possible
- Return to normal activities as soon as possible

Health & Safety


Account for all personnel Care for Injured Protect workers during recovery

Consider the building/collection **guilty until proven innocent**


Health & Safety

Are you equipped with appropriate personal protective equipment (PPE)?

- Hardhat
- Boots
- Respirator/N95 particulate mask
- Gloves
- Protective goggles



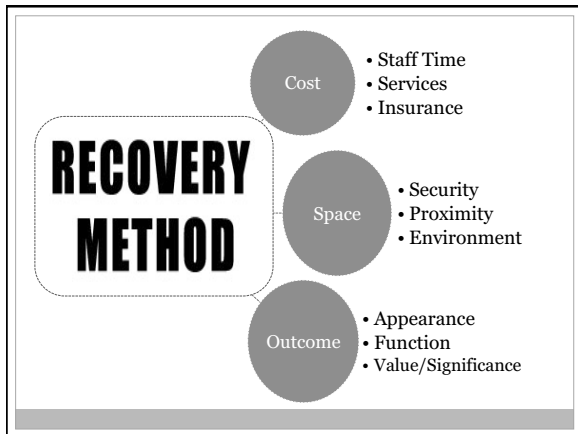
Human Dynamics



- People approach tasks differently
- People interact differently
- People have issues going on in their lives that affect their responses

Avoiding Burnout:
Communication and Teamwork

- Brief people before begin response/recovery
- Pace yourself
- Emphasize teamwork
- Schedule breaks away from incident area
- Encourage eating properly & maintain fluid intake
- Rotate teams for breaks or new duties
- Conduct regular discussions & updates
- Conduct debriefing after the event



Freezing buys time ...

- “Buys time” to make decisions
- Only response for some materials
- Inhibits mold growth
- Does not affect inks

BUT...

- Special equipment needed
- Not suitable for all materials

Appendix 10:
Working with Commercial Recovery Services

- Be clear about the services you need
- If unsure, ask for detailed explanations
- Document with photos before contracted services start
- Request a sample batch be processed before signing an agreement
- Sign letter of agreement/contract that specifies treatments
- Consult local/regional networks for assistance & recommendations

Working with Commercial Recovery Services

- *What a disaster recovery company should do:*
 - Listen
 - Assess damages
 - Consult / advise
 - Perform recovery & rebuild services
- *What they should NOT do:*
 - Take over
 - Establish client priorities

Inventory Control

Purpose is to keep track of materials that are removed for storage, treatment & restoration, or disposal:

- ❖ Vital for control & insurance purposes
- ❖ Key to a timely & efficient recovery

Inventory Control

Appendix 11: Books / Documents

Box #	Sheet #	Box Label	Sheet Label	Quantity	Notes

- Number boxes & sheet
- Put call number range on box & sheet
- Record movement on sheet

Barcodes on outside covers?
Scan book barcodes & link to box barcode / control number

Inventory Control

Appendix 11: Objects

Accession	Object	Quantity	Accession #	Description	Accession #

- Usually item-by-item
- Capture: accession #, type of object, type of damage, type of salvage
- Record movement on sheet
- Track **all** associated material

Documentation should be brief but accurate!

Disaster Response Supplies & Equipment

Appendix 12

- ❖ Immediate Response Supplies
- ❖ Personal Protective Supplies
- ❖ Supplies & Equipment

Category	Item	Quantity	Notes		
IMMEDIATE RESPONSE SUPPLIES	Water	200	1 liter per person per day		
	Food	100	3000 calories per person per day		
	Medical supplies	20	First aid kit, bandages		
	Personal hygiene	50	Toiletries, soap, paper towels		
	Lighting	10	Flashlights, batteries		
	PERSONAL PROTECTIVE SUPPLIES	Gloves	200	Nitrile or latex	
		Respirators	20	Filter masks	
		Protective suits	10	Disposable coveralls	
		Boots	20	Disposable shoe covers	
		SUPPLIES & EQUIPMENT	Generator	1	5000 watt
			Power tools	10	Saws, drills, pry bars
			Shovel	10	6-foot long
			Wheelbarrow	5	60-gallon capacity
			Hand saw	10	18-inch
			Shovel	10	4-foot long
	Generator		1	2000 watt	
	Power tools		10	Drills, saws	
	Shovel		10	4-foot long	
	Wheelbarrow		5	60-gallon capacity	

Immediate Response Supplies



www.gaylord.com

www.protext.net





Sources of Supplies/Services/Experts

- Regional Conservation/Assistance Centers
www.rap-arcc.org
- Disaster Mitigation Planning Assistance
www.matrix.msu.edu/~disaster
- Cooperative Disaster Networks
www.heritagepreservation.org/programs/TFDisasterNetworks.html
- Heritage Preservation *Field Guide to Emergency Response* Supply lists, Resources



Resources to Inform Salvage Decisions

Appendix 13

Salvage at a Glance

For a complete list of materials see the full table on page 42. See the Appendix for a complete list of materials.

Books

Material	Priority	Handling Precautions	Packing Method	Drying Method
☛ Cloth or paper covers	Air Dry or Freeze within 48 hours, if many books.	Do not open or close, do not remove covers.	Pack spine down in plastic-lined cardboard box, one layer deep.	Air Dry, fanning pages and standing upright. Freeze, then Vacuum Freeze Dry.
☛ Leather and vellum covers	Air Dry immediately. Freeze if many books.	Do not open or close, do not remove covers.	Separate with freezer paper, pack spine down in plastic-lined cardboard box, one layer deep.	Air Dry, fanning pages and standing upright. Freeze, then Vacuum Freeze Dry.
☛ Books with coated paper	Freeze immediately. Air Dry if no other option.	Do not open or close, do not remove covers. Coated paper will permanently block if allowed to dry.	Keep wet, pack spine down in plastic-lined cardboard box, one layer deep.	Freeze, then Vacuum Freeze Dry. Air Dry, relaxing pages and fan books open.

Paper: Uncoated

Material	Priority	Handling Precautions	Packing Method	Drying Method
☛ Stable media	Air Dry or Freeze within 48 hours.	Do not separate single sheets.	Pack in plastic-lined cardboard box.	Air, vacuum or freeze dry.
☛ Soluble inks (e.g., ball, colored, ball point pens)	Freeze immediately. Air Dry if no other option.	Do not box.	Pack in plastic-lined cardboard box.	Air or freeze dry.
☛ Fibrile media (pastes, chalks)	Immediately freeze or dry.	Do not box.	Interleave between folders or cards in milk crates or garbans.	Air or freeze dry.
☛ Maps and posters	Freeze immediately. Air Dry if no other option.	Wet paper is fragile, use extra caution if folded or rolled.	Support large items with board covered with plastic or held in existing metal drawer.	Air or freeze dry.

Appendix 14

Books: Cloth or Paper Covers

Flags

☛ Cloth or paper covers: Please book to stabilize and prevent mold growth if they are a large volume or have many pages. Do not dry.

☛ Leather or vellum covers: Please book to stabilize and prevent mold growth if they are a large volume or have many pages. Do not dry.

Handling Precautions

Do not open or close books to remove media and coverboards are supported. Do not remove covers. Do not separate.

Equipment and Supplies

For cloth covers: 100% cotton muslin or newspaper (heavy). For leather covers: 100% cotton muslin or newspaper (heavy).

Packing

Separate books with freezer paper. Use plastic-lined cardboard boxes. One layer deep.

Response to Data

Monitor for mold. Monitor for moisture. Monitor for fungal growth. Keep the book closed and in the dark.

Completion and Control

Books for small numbers of books (less than 1000 volumes) can be air dried. For large numbers of books, freeze and dry. For large numbers of books, freeze and dry. For large numbers of books, freeze and dry. For large numbers of books, freeze and dry. For large numbers of books, freeze and dry.

Appendix 13: Salvage at a Glance

Salvage at a Glance

The * symbol indicates that materials can be safely frozen. In some cases freeze drying or a sequential treatment like freeze-thaw-air dry is the most appropriate technique for salvage. In other cases freezing is the best way to "buy time" by putting wet items in stasis. See recommendations for individual materials below for more detail.

Books

Material	Priority	Handling Precautions	Packing Method	Drying Method
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Resources to Inform Salvage Decisions

Appendix 15

Drying Techniques for Water Damaged Books and Paper

TECHNIQUE	PROCEDURE	SPEED	DIRECT COST	STAFF & LABOR	AVAILABILITY	RESULTS
Air Drying	Items dried by circulation in a controlled environment. No humidity control.	slow to moderate	low	high	good	+controlling humidity +controlling temperature +controlling light
Freeze Drying	Items placed in a sealed container. Freezer temperature maintained by building, refrigerator, freezer or dry ice.	slow to moderate	high	low	good	+controlling humidity +controlling temperature +controlling light
Thermal Drying	Items placed in a sealed container. Heat applied to dry. Humidity controlled by building, refrigerator, freezer or dry ice.	fast	very high	low	good	+controlling humidity +controlling temperature +controlling light
Vacuum Freeze Drying	Items placed in a sealed container. Freeze. Vacuum applied. Heat applied to dry. Humidity controlled by building, refrigerator, freezer or dry ice.	fast	very high	low	good	+controlling humidity +controlling temperature +controlling light
Thermal Vacuum Drying	Items placed in a sealed container. Heat applied to dry. Vacuum applied. Humidity controlled by building, refrigerator, freezer or dry ice.	fast	very high	low	good	+controlling humidity +controlling temperature +controlling light

Note: Water damaged books require other than these additional treatments (cleaning, buffering, mechanical) depending on water source or degree from the originating agency. See IICRC Technical Guide: Response to Water in the Home and Business for additional information on drying techniques.

Webinar 4 of
Protecting Your Collections: Writing a Disaster Response Plan

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Emergency Event Debriefing

**Information gathering
Assessment of response
The human factor**

Keep an Emergency Event History

General rules for successful disaster recovery

- Think creatively – make use of your planning
- Stabilize collections as soon as possible
- Provide as ideal an environment as possible for collections
- Protect unaffected materials to prevent damage
- Select recovery method(s) best suited to collections and their damage
- Avoid irreversible damage in the recovery phase
- Reduce effects of disaster on materials as much as possible
- Prevent future problems which might result from disaster or aftermath

Stumbling blocks to a successful recovery

- > Poor management
- > Poor communication & updates
- > Poor stress management
- > Lack of flexibility
- > Isolation
- > Overly ambitious
- > Lack of inventories/priorities
- > No practice
- > Failing to harness goodwill & funding opportunities event provides

Webinar Objectives

- To help you write or revise your disaster plan
- To review emergency response & recovery plans
- To provide key resources to help initiate or refine disaster planning at your institution
- To introduce you to techniques for salvaging a variety of collection types

OVERARCHING GOAL :
Disaster Plan completed for all collecting institutions with staff trained to implement

Thank You!

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WORKING WITH A COMMERCIAL DOCUMENT RECOVERY SERVICE

- Be clear about the services you need. If unsure, ask for detailed explanations
- Document with photos before contracted services start
- For books and documents, request a sample batch (if frozen) be processed and evaluated before signing an agreement
- Sign letter of agreement/contract that specifies types of treatments
- Consult local/regional networks for assistance & recommendations on reputable companies

Questions for a Recovery Service

- What is your experience working with libraries/archives/museums or similar?
- Can you provide three references from similar recovery projects?
- What are your quality control measures?
- Do you provide guarantees for treated materials?
- What is your insurance coverage? Please provide a sample Certificate of Insurance
- What drying methods do you offer?
- What other recovery services can you provide?
- Do you provide free estimates? Free processing of sample batches?
- Do you recommend that this work be performed on-site or in your document recovery center? Why?
- Do you subcontract parts of the recovery or treatment?
- Who makes shipping/transportation arrangements?

INVENTORY CONTROL LIST

Box Control no.	Call no./Accession no. Range	No. of items in box	Location / date	Location / date	Location / date

INVENTORY CONTROL

Inventory control is vital in a large disaster, but difficult to visualize and execute, especially if you haven't planned ahead. Keeping track of materials that are sent to locations out of the building (dry storage, freezers, etc.) or separated from associated material (enclosures, frames, etc.) after a disaster can be challenging. Good inventory control is important if salvage and treatment needs to be conducted in a priority order. Knowing approximately where each item is, what is in each box, and where that box is located, is essential for timely and efficient recovery. Listed below are possible methods for inventory control and the process to be used with an Inventory Control List and/or Object Documentation List

For books:

- 1) Mark each box with the call number of the first and last book and the total number of books in the box. Unless it is a very small disaster there won't be time to record each book. If books are off the shelf or not in order, record the base call number, range, section or other identifying information. Ten to twelve average size books will fit into a standard document box (1.5 cubic feet).
- 2) Take the box to the control point and transfer the box information to an Inventory Control List. Assign a Box Control number from the list to the box and mark it on at least 2 consecutive sides of the box. Instead of numbers, a barcode could be assigned to the box and recorded on the Inventory Control List. With barcodes, boxes could be 'checked out' to various locations (freezer, dry storage, etc.)
- 3) Whenever the box is moved, its new location and date are recorded on the Inventory Control List.

Note: If items have barcodes on the outside (always avoid opening wet books!), it is possible to scan each item before putting it into the box; link the item to the box with another barcode or control number.

For objects:

- 1) Often must be done at an item-by-item level of description. Tracking movement can be combined with efforts to record damage. Due to time constraints and quantity of material involved, documentation should be brief but accurate.
- 2) If possible try to capture: accession or catalog number; type of object; type of damage; category of salvage action required; old location; and new location. Record on the Object Documentation List.
- 3) It is not unusual for associated material to be separated from objects such as frames, glazing, backings or enclosures with informational value. Track and label all associated materials.

Depending on your collection types and institutional needs, make multiple blank copies of the Inventory Control List and/or the Object Documentation List and file with your Disaster Plan for ready access.

DISASTER RESPONSE EQUIPMENT	SUPPLIES /	IMMEDIATE RESPONSE	RINSING	AIR DRYING	FREEZING FOR STABILIZATION
DISASTER RESPONSE SUPPLY CANS					
<i>In-house source of immediate supplies</i>					
33 gal. plastic trash can with wheels and lid		X			
1 roll 10' x 100' 2 mil plastic sheeting		X			
1 roll masking/duct tape (tape sheeting)		X			
1 spool packing string (hang sheeting)		X			
10 large plastic trash bags (to fit can)		X			
2 large sponges		X			
1 - 5 gal. bucket		X			
1 box disposable nitrile gloves		X			
1 roll "Do not enter" barricade tape		X			
2 rolls paper towels		X			
1 pair scissors		X			
1 dozen pencils, sharpened		X			
2 black permanent marking pens		X			
lined paper pad		X			
flashlight (self standing, extra batteries)		X			
10 masks (e.g., N95)		X			
PERSONAL PROTECTIVE SUPPLIES					
Aprons (plastic, disposable)		X	X	X	X
Gloves (disposable nitrile, work)		X	X	X	X
Hard hats		X	X	X	X
Masks (e.g., N95) and respirators		X	X	X	X
Rubber boots (non-skid)		X	X	X	X
Vest with pockets		X	X	X	X
Goggles		X	X	X	X
DISASTER RESPONSE SUPPLIES / EQUIPMENT					
Air conditioners (portable)		X			
Baricade tape ("Do Not Enter")		X			X
Blotting paper (white)				X	
Boxes (sturdy cardboard)					X
Brooms and dustpans		X		X	
Brushes (soft, natural bristle)		X			
Bubble pack		X		X	X
Buckets		X	X	X	X
Camera (digital)		X	X	X	X
Cellular phone (w/ emergency numbers)		X			
Clothesline or heavy packing string				X	
Clothespins (rust proof)				X	
Dehumidifiers				X	
Dish drying racks (plastic covered)				X	
Dry ice		X			
Extension cords (50 ft., heavy duty, grounded)		X		X	
Fans (floor, window)		X		X	
First aid kit		X	X	X	X
Flashlights (self standing, extra batteries)		X	X	X	X
Freezer or waxed paper					X
Garbage bags (large plastic)		X		X	X
Generator (portable, fuel supply)		X	X	X	X
Hose (garden-type with adjustable nozzle)			X		

DISASTER RESPONSE EQUIPMENT	SUPPLIES /	IMMEDIATE RESPONSE	RINSING	AIR DRYING	FREEZING FOR STABILIZATION
Monitors (temperature and humidity)		X	X	X	
Ladders and kick stands		X			X
Mat board		X		X	
Metal book trucks		X			X
Microspacula			X	X	
Moisture meter		X		X	
Mops		X		X	X
Newsprint (un-inked, blank)		X		X	
Office supplies (paper pads,pencils,waterproof pens/markers,flipcharts,large self-adhesive labels)		X		X	X
Pallets					X
Paper towels		X		X	
Photo Flo, wetting agent (KODAK)		X		X	
Plastic bags (e.g., Ziplock, quart and gallon)		X		X	X
Plastic sheeting (polyethylene) rolls		X	X	X	
Plastic trays (photo trays or shallow dish pans)		X	X	X	
Plexiglas sheets		X	X		
Plywood or masonite board		X			
Polester film (e.g., Mylar)		X		X	
Polyester, spunbond (Reemay, Hollytex)			X	X	X
Pump (portable)		X			
Rolling carts, book trucks		X	X	X	X
String (packing string on spool)		X		X	
Scissors		X			X
Screen (nylon)		X		X	
Shrinkwrap					X
Silicone release paper				X	X
Sponges (regular, soot)		X	X	X	
Tables (portable, folding)		X	X	X	X
Tags (waterproof, Tyvek)		X		X	X
Tape (masking, packing, duct)		X		X	X
Tool kit (crowbar, hammer, pliers, screwdriver, wire cutter)		X	X	X	X
Towels, rags (absorbant, cotton)		X	X	X	
Utility knives (extra blades)		X		X	X
Vacuum cleaner (HEPA for soot or mold)		X			
Wet vacuum (10 gallon industrial)		X			

Salvage at a Glance

The “☼” symbol indicates that materials can be safely frozen. In some cases freeze drying or a sequential treatment like freeze-thaw-air dry is the most appropriate technique for salvage. In other cases freezing is the best way to “buy time” by putting wet items in stasis. See recommendations for individual materials below for more detail.

Books

Material	Priority	Handling Precautions	Packing Method	Drying Method
☼ Cloth or paper covers	Air Dry within 48 hours, if many books.	Do not open or close; do not remove covers.	Pack spine down in plastic lined cardboard box, one layer deep.	Air Dry, fanning pages and standing upright. Freeze, then Vacuum Freeze Dry.
☼ Leather and vellum covers	Air Dry immediately. Freeze if many books.	Do not open or close; do not remove covers.	Separate with freezer paper, pack spine down in plastic lined cardboard box, one layer deep.	Air Dry, fanning pages and standing upright. Freeze, then Vacuum Freeze Dry.
☼ Books with coated paper	Freeze immediately. Air Dry if no other option.	Do not open or close; do not remove covers. Coated paper will permanently block if allowed to dry.	Keep wet, pack spine down in plastic lined cardboard box, one layer deep.	Freeze, then Vacuum Freeze Dry. Air Dry, interleave pages and fan books open.

Paper: Uncoated

Material	Priority	Handling Precautions	Packing Method	Drying Method
☼ Stable media	Air Dry or Freeze within 48 hours.	Do not separate single sheets.	Pack in plastic lined cardboard box.	Air, vacuum or freeze dry.
☼ Soluble inks (e.g., felt, colored, ball point pens)	Freeze immediately. Dry if no other option.	Do not blot.	Pack in plastic lined cardboard box.	Air or freeze dry.
☼ Friable media (pastels, chalks)	Immediately freeze or dry.	Do not blot.	Interleave between folders and pack in milk crates or cartons.	Air or freeze dry.
☼ Maps and posters	Freeze immediately. Air Dry if no other option.	Wet paper is fragile; use extra caution if folded or rolled.	Support large items with board covered with plastic or keep in existing metal drawers.	Air or freeze dry.

Paper: Coated

Appendix 14

Salvage of Water Damaged Collections

To be used with “Salvage at a Glance” and “Drying Techniques for Water Damaged Books and Paper.”

The full appendix (30 pages) is available as a download at:

Connecting to Collections Online Community course, “Protecting Your Collections: Writing a Disaster Response Plan.”

<http://www.connectingtocollections.org/courses/writing-a-disaster-plan>

DRYING TECHNIQUES FOR WATER DAMAGED BOOKS AND PAPER

TECHNIQUE	PROCEDURE	SPEED	DIRECT COST	STAFF & LABOR	AVAIL-ABILITY	RESULTS
Air Drying	Items dried by circulating air, preferably in a cool, low humidity space	days or week	negligible	high	very good	<ul style="list-style-type: none"> • swelling (20-30%) • cockling • blocking • inks running • mold threat
Dehumidification	Large, commercial dehumidifiers installed to dry building, furnishings, and collections in place	varies	varies	moderate	good	<ul style="list-style-type: none"> • limited cockling, if used only on damp items • inks may run
Freezer Drying	Items placed in self-defrosting freezer (under -10° F) are frozen, then ice is slowly sublimated	months or year	negligible (if done at home)	moderate	very good	<ul style="list-style-type: none"> • swelling • blocking
Vacuum Freeze Drying	Frozen items placed in chamber; vacuum drawn; small amount of heat introduced. Items remain frozen during drying. Ice crystals drawn out by sublimation	1-2 weeks per load	\$5 - \$10 per volume	low	good	<p>Very good results IF frozen quickly</p> <ul style="list-style-type: none"> • leather & vellum may warp • photos may lose gloss
Vacuum Thermal Drying	Wet or frozen items placed in chamber; heat vacuum drawn; heat introduced; items dried by evaporation (above 32° F, up to 100° F)	1-2 weeks per load	\$5 - \$10 per volume	low	good	<p>Damaging to cellulose.</p> <p>Potential:</p> <ul style="list-style-type: none"> • swelling/cockling • inks running • blocking

Note: Water-damaged books & paper often need additional treatments (cleaning, sanitizing, deodorizing) depending on water source or damage from fire extinguishing agents. See NEDCC Preservation Leaflet “*Emergency Salvage of Wet Books and Records*” www.nedcc.org for additional information on drying techniques.