Disaster Recovery
Salvage Procedures

We’re all in this together!

Credit: California Historical
Objectives

• Your Safety First! Work with first responders
• Become familiar with types of disasters, damages to materials, and resources
• Perform basic salvage techniques
• Be able to apply information to individual institution
Introduction

• Emergency Management

1. Prepare – Risk assessment and Planning
2. Mitigate – Steps to reduce risks
3. Respond – Implement Plan, Work with first responders
4. Recover – Care, Salvage, Re-assessment
Types of Disasters

• Colorado: fires and floods lately but, also tornadoes
Types of Disasters

- Water is most common and comes in many forms: floods, leaks, snow, hail, fire suppression
- Hurricanes, tornadoes
- Mold – mold starts within 48-72 hours at $T > 70^\circ$ and RH $>65\%$
- Man-made: explosions, toxic spills
Damages to Material Types

- Framed artwork – damage to frame, including solubilizing ornamentation, sticking to glass
- Paintings – shrinkage, soluble layers, varnish bloom
- Photographs – emulsions /binders dissolve, sticking, mold
- Books – Dye stains, pages stick, covers distort
- Paper – mold, fragility, distortion, ink bleed, sticking
- Textiles – dyes run, stains, shrinkage, distortion, mold, partial solubility
Damages to Material Types

- Baskets – distortions, dye bleed and staining
- Leather, Skins, Parchment – shrinkage, staining
- Bone, Ivory, Shell – shrinkage, cracking, swelling
- Metals (arms) – corrosion
- Wood, Furniture – shrinkage, cracking, swelling
- Ceramics, Stone - staining
- Natural History Collections/Specimens – fragility, softening of consolidants
- Plastics – staining
RESOURCES

Numerous resources are available both in print and online for salvage of all types of materials
Resources / Technology

- Smart phones
  - Communication (text – cell calls may not go through)
  - Camera
  - Voice Recorder (app)
  - Flashlight (app)
  - Charger
Resources / Technology

• Specialty Apps
  – NCPTT/Heritage Preservation’s
    • ERS app
PRE-DISASTER

Credit: SacredArtMuralsCo.
Pre-Disaster

- Risk Assessment (all risks & locations)
- Written Disaster Plan (steps, team, first responders)
- Floor plans
- Designated response areas
- Prioritization list: pre-determined and locations known
Team

• In House – team leader, emergency response liaison, security, facilities, documentation, salvage, supplies, PIO, insurance
• First responders
• Additional team members – outside vendors, sister institutions
Salvage Priorities

• Critical to ongoing operations of institution? (e.g. database, accounting)
• Is it a loan to your institution?
• Available in another collection?
• Can it be replaced and will replacement cost more/less than conservation?
• High or low collection value / priority?
• Does it need immediate priority due to its composition?
RESPONSE

Utilize Networks – responders, institutions, community
Emergency Response

• Keeping in mind personal safety first
• Basic steps
  – Assess
  – Stabilize
  – Document
  – Clean
  – Salvage

Don’t just throw things out – more may be salvageable than you think
Safety First

• Once first responders have given the OK to get into the site you may proceed

• Remember Your Safety First!

• Use the buddy system

• You never know what’s in that water
Hazards Awareness

- Contaminants – sewage, asbestos, lead or other heavy metals, oils, chemicals
- Electric or gas lines
- Mold – PPE, analysis, HEPA vac, isolate
RECOVERY / SALVAGE

Credit: US Government Archives

Credit: History Colorado

http://collectioncare.auraria.edu
Basic Salvage Principles

• Remove standing water
• Reduce RH, do not increase heat – add air flow
• Isolate affected materials
• Tracking system
• Consider health risks
• Dry or freeze wet materials
Terminology

- Air-Drying: well ventilated, good air-circulation, use of absorbent interleaving
- Interleaving: blotter paper, un-inked newsprint, paper towels, waxed or freezer paper (to prevent pages sticking together)
- Freezing: Sub-zero commercial freezer best but home freezer can also be used, Refrigerated trucks can slow mold growth

Source: NEH Emergency Response and Salvage Wheel
Terminology

• On-site Dehumidification: Super dry air pumped in, moist air drawn out (good in modern buildings, do not use for historic structures or most museum collections
• Rinsing: cleansing dirty or muddy items through gentle agitation of water in containers or stream of water
• Vacuum Drying (Thermal Drying): Items placed in vacuum chamber and heated, may damage many materials
• Vacuum Freeze-Drying: Vacuum chamber at below-freezing temperatures, not all materials can be frozen

Source: NEH Emergency Response and Salvage Wheel
Records

Credit: Damon Stuebner

http://collectioncare.auraria.edu
Records

- Keep records
  - Photos /actions taken (may need for insurance purposes)

- Materials can lose context
  - Labels, box, shelf or file #s
  - Keep documents in order
Records

Credit: Ellen Carrlee

http://collectioncare.auraria.edu
SALVAGE SUPPLIES

Credit: Amigos Library Services
Salvage Supplies

- Get before you need - keep stocked
- Store in plastic containers (bins, trash cans) seal lids with duct tape
- Keep several kits in strategic locations
- Types: basic, personal, other equip
Salvage Supplies

• Not an exhaustive list but information can be found in many resources and can be tailored to your needs
• You may have to get creative and use what you can get your hands on

Credit: Amigos Library Services
Salvage Supplies

• Basic
  – Portable tables, paper towels, wax or freezer paper, spun polyester fabric (other choices), blank newsprint paper, sponges, plastic trash bags, plastic sheeting, rubber gloves, pencils, tags, plastic buckets/trash cans, plastic clips, clothesline, mops/pails, waterproof marker, small portable digital T/RH reader/walkie-talkies/disposable camera
Salvage Supplies

• Personal
  – Clipboard (copies of floor plan), pencils, Tyvek suit, rubber & surgical gloves, camera, bottled water (non-perishable snacks), flashlight, batteries, disposable aprons, dust masks/ respirator, safety glasses, rubber boots, waterproof clothing, disposable wipes, small first aid kit
Salvage Supplies

• Other Equipment
  – Dehumidifiers, wet vacs
  – Grounded extension cords
  – Fans
  – Portable generator, hardhats
  – Freezer (pre-arranged off-site facility)
  – Disaster recovery firms on-site trucks
POST-EVENT

- Care of People
- Evaluation
- Re-planning
- Continue building relationships with other institutions & responders
- Re-stock salvage supplies
- Practice, Practice, Practice!!!!
TODAY’S FOCUS

Credit: Amigos Library Services

Credit: Bureau ATF

http://collectioncare.auraria.edu
TRIAGE

Credit: Kevin Levine
Triage

• Rescue items in good condition first to prevent further damage
• Don’t ignore items that are just damp
• Priority high to low: Most valuable/least stable or most vulnerable/most salvageable
• Lowest priority: beyond help, replaceable or lacking significance
• Isolate items exhibiting mold
• Paper types & salvage
Paper Types

• Uncoated: Generally more porous better ink absorber, sometimes sized with starch, letterheads & envelopes, newsprint, less reflective, also known as “bond”

• Coated: Very smooth, glossy or matte, more opaque (due to coating), pages stick together when wet (separate carefully while wet), magazines, book covers, some printing papers

• Note: sometimes parchment can look like paper – if unsure do NOT air-dry, freeze or consult conservator
Paper Salvage Triage

- Treat least stable, most important, most salvageable first
- Treat in first 48 hrs or freeze
- Isolate items with mold
- Partially or unevenly wet
- Bleeding inks or colors
- Separate those items that may be replaceable or lack value & possibly discard (after checking with expert)
- Lowest priority are materials beyond help – apply space and resources to salvageable items.
Key Points of Paper Salvage

• Limit handling – paper can be both resilient and weak
• Support items during handling
• Do not touch or rub media
• Gently separate items that are in contact
• Do not unfold or unroll items that resist
• Rinse supported paper, drain on smooth inclined surface if possible, then proceed to drying
• If rinse does not remove mud and debris leave for conservator
BOOKS

• Caution: Note weight of wet books!

Credit: Watson Library, Wheaton College

Credit: Colorado State University
Book Salvage Triage

- Treat within 48 hrs or freeze
- Isolate any with mold
- If coated, carefully separate pages while wet
- Bleeding inks or colors freeze or dry as soon as possible
- Special value books – seek immediate advice
- Set aside expendable or replaceable – deal with last
Key Points of Book Salvage

- Sort by wet, dry, or damp – isolate mold
- Air-circulation is key
- Partially wet: Stand on edge with covers open to 90-degree angle, air dry
- Very wet: Lay on flat surface, interleave < 20%, replace interleaving when wet
- If rinsing is necessary, hold book closed
- If too many books to air-dry in 48hrs: wrap in freezer or waxed paper, pack spine down in sturdy container, freeze
Thank You

- Connecting to Collections / IMLS
- University of Colorado
- Pikes Peak Library District
- Campbell Center for Historic Preservation Studies
- Karen Pavelka /Harry Ransom Center
- Maria Valentina Sheets, Conservation Inc.
- National Park Service
- NCPTT / Heritage Preservation
- NEDCC
- Texas Association of Museums / Amigos Library Services, Inc.
- WESTPAS
TABLETOP EXERCISE

• This is your team for the moment.
• Your institution had some flooding last night and some materials are water damaged.
• You’ve got buckets and a few plastic bins with some emergency supplies.
• How do you efficiently salvage the materials (how do you set it up)?
• Where’s the nearest water access?
• How do you change out the water without causing more water damage?
• What emergency materials can you get your hands on locally?
Remember Safety First
&
Let’s Get Wet!

Credit: Brooklyn Historical Society

http://collectioncare.auraria.edu