Fort Vancouver National Historic Site

EMERGENCY OPERATIONS PLAN
MUSEUM COLLECTIONS MODULE

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National Park Service
Department of the Interior

OVERVIEW

The policy of Fort Vancouver National Historic Site (FOVA) is to use the Incident Command System (ICS) in the event of an emergency. However, FOVA is located in an urban environment where the local police and fire departments provide emergency and preventative support. This consideration must be continued in an Emergency Operations Plan (EOP). The Clark Regional Emergency Services Agency (CRESA) which has county-wide emergency coordination responsibility, and the City of Vancouver, Wash. which provides on-site police, fire, HAZMAT and Applied Technology Council (ATC)-20 safety evaluation of buildings, are key partners in successfully managing the facility in an emergency situation. Additionally, HAZMAT coordination and abatement may be coordinated through the Vancouver Fire Department and the U.S. Army, Environmental Services Branch, Public Works, Vancouver Barracks.

The CRESA is the county-wide emergency operations center where all emergency activities are coordinated. The CRESA has a direct interface with the Washington State Emergency Management Division (WSEMD) and the Federal Emergency Management Agency (FEMA). All requests for WSEMD and FEMA assistance are coordinated through CRESA.

The protection of personnel and visitors is the highest priority of the National Park Service (NPS). The protection of cultural and natural resources, including archeological artifacts, historic objects, artwork and documents is a top priority, as well. All reasonable efforts should made by FOVA personnel toward these goals. By implementing the EOP, which includes this Museum Collections Module (MCM) focused on museum property, these priorities can be achieved with the greatest efficiency and safety to both visitors and employees.

The ICS implemented at FOVA is a component of the National Inter-Agency Incident Command System (NIICS). The ICS can be employed for any all-risk incident and is applicable to both daily emergencies and large-scale incidents, including:

- Planned public event response
- Fire and other emergency incident response
- Park-wide disaster response

The ICS is always activated if there is any question about the severity of the incident. At FOVA, any incident is a multi-jurisdictional operation, and a unified command structure should be established. Many of the functions traditionally provided within the normal ICS are, by necessity, functions accomplished through coordination with the CRESA and the City of Vancouver.

The FOVA EOP describes how NPS personnel manage, respond to, and coordinate resources and personnel in an emergency situation. Consideration is given to mitigating damage to the park's valuable resources and the restoration of normal operations as soon as safely and practically possible. This MCM is designed to be seamlessly incorporated into the park's overall EOP. During the course of developing this module interviews were conducted with Vancouver National Historic preserve partners to ascertain their interaction and responsibility in emergency situations. A list of contacts is provided in Part 6 of this document.

While this museum module provides specific guidance in prevention, emergency operations, and recovery for museum collections impacted by an emergency situation, it cannot meet two very important components of emergency preparedness. First, the responding park staff must be properly trained in emergency operations procedures. Secondly, the plan must be exercised, revised, and exercised again until its implementation is almost automatic. Unless the park takes

this module and the overall park EOP and exercises it to perfection they will be unable to effectively respond to an emergency situation.

Another key ingredient to the overall park EOP is to ensure that all local responders, such as City of Vancouver fire, police, and building inspectors, and members of CRESA have inspected the facilities, know the facilities' strengths and weaknesses, and understand the needs therein.

Readiness for emergencies can only be achieved through frequent inspections and interactions between park staff and the first responders. The local responders are also an excellent source to provide both information and training for park staff.

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ABBREVIATIONS

ATC	Applied Technology Council
CRESA	Clark Regional Emergency Services Agency
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FOVA	Fort Vancouver National Historic Site
HIVA	Hazard Identification Vulnerability Analysis
HVAC	Heating, ventilation and air conditioning
ICS	Incident Command System
MCM	Museum Collections Module
MDRT	Management Damage Response Team
NEPA	National Environmental Policy Act
NHPO	National Historic Preservation Act
NIICS	National Inter-Agency Incident Command System
NPS	National Park Service
PAM	Pearson Air Museum
PWRO	Pacific West Regional Office
SHPO	State Historic Preservation Office
WSEMD	Washington State Emergency Management Division

Part 1 ▫ EOP Museum Collections Module at a Glance

INTRODUCTION

Purpose and Scope

The safety of visitors and employees, and the protection of cultural resources, are the objectives of the MCM, which addresses the following primary elements:

- Emergency planning, response, and protection of public, staff, and collections at public access locations.
- Emergency planning, response, and protection of staff and collections at the park's museum storage facilities.

Response Priorities

In both the planning and execution of the park-wide EOP and the MCM, the following priorities are assigned:

1. Develop a Park EOP and train staff in implementation; preposition emergency supplies and equipment.
2. Protect life and safety; rescue those in immediate danger during an emergency.
3. Eliminate or mitigate significant dangers to human life and prevent additional casualties.
4. Protect natural and cultural resources and prevent/minimize potential dangers.
5. Implement recovery procedures as soon as possible following the emergency incident.
6. Restore normal park operations, partnership, and community activities as soon as possible.

Collections

FOVA curates a significant collection of archeological artifacts, historic objects, artwork, and documents which are exhibited and/or stored at locations throughout the park. Table 1 summarizes the FOVA collections by site location.

Table 1 Summary of FOVA Collections

SITE	LOCATION	COLLECTIONS AT THE SITE
Chief Factor's House and Kitchen	Fort	Archeological artifacts, cataloged objects.
Indian Trade Shop	Fort	Cataloged objects.
Fur Store	Fort	Primary museum collection storage, offices, "in process" artifacts.
Carpenter Shop	Fort	Cataloged objects.
Bake House	Fort	Cataloged objects.
Visitor Center	Visitor Center	Archeological artifacts, cataloged objects.
Counting House	Fort	Cataloged objects.

Threats

As with all collections of cultural heritage items, collections at FOVA are at risk of damage or destruction from numerous natural and man-made disasters. For FOVA, situated within Clark County, Wash., these potential threats, or hazards, have been identified by the CRESA in their 1999 draft report entitled, *Clark County Hazard Identification Vulnerability Analysis* (HIVA), and an assessment made of their probability. The assessment is based on a county-wide analysis and therefore is not specific to FOVA.

Taking into account the specific location of FOVA, certain hazards given a generally low or medium rating in the Clark County analysis are in fact a greater risk for FOVA. Such hazards as an airplane crash (due to Pearson Air Field being located adjacent to the park and the close proximity to Portland International Airport) constitutes a major consideration and risk for FOVA. The park is much more vulnerable to highway transportation related incidents and a hazardous material spills because of the adjacent Interstate Highway, the Columbia River (with its barge and container ship traffic), and the adjoining railroad tracks. Additionally, the Federal Emergency Management Agency (FEMA) lists FOVA as being in a flood hazard area because dam failure and subsequent flooding from the Columbia River is possible. In HIVA, FOVA is identified as being in a Zone A (high-risk) earthquake location. The threat of volcanic activity is also present.

Water damage is the most likely form of damage expected at FOVA. This probability is not only posed in the form of natural flooding or storm related rainfall, but also as a result of normal disaster response activities, especially the use of water in fire fighting and fire suppression systems. The hazards and likely resulting damage are summarized in Table 2.

Table 2 Summary of FOVA Hazards and Related Damage

HAZARD	POTENTIAL THREAT TO COLLECTIONS
Airplane crash	Fire Water Breakage (direct fracturing of objects) Vapor/gas (chemical air pollution) Chemical contamination Smoke
Drought	Settling of buildings Insect and vermin infestations Breakage
Earthquake	Fire Water Breakage Particle deposition
Energy emergency	Water Disruption of utilities Fire Loss of environmental control in buildings
Flood or dam failure	Water Mud/silt deposition Fire Breakage Smoke
Forest/Wildland fire	Fire Water Breakage
Hazardous materials spill	Vapor/gas Chemical contamination Fire Water
Severe storm	Water Breakage

Table 2 Summary of FOVA Hazards and Related Damage (continued)

Terrorism and violent persons (civil disobedience)	Fire Water Breakage Vandalism Smoke Vapor/gas Chemical contamination
Tornado	Breakage Water Fire Dust
Volcano	Fire Volcanic ash Vapor/gas Dust Water Mud/debris deposition Breakage

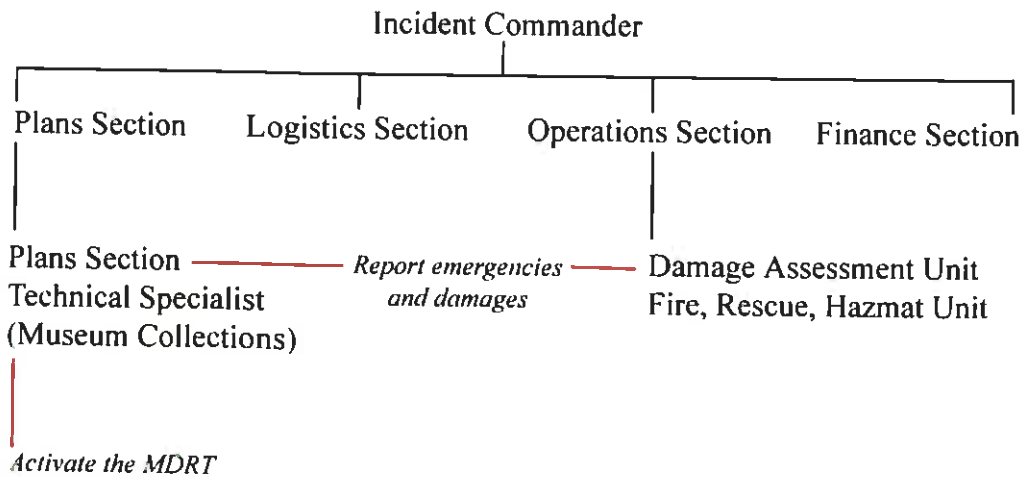
Part 2 ▫ Emergency Leaders and Laws

Three groups communicate during an emergency at FOVA: the ICS Emergency Operations Center (Plans Sections), the Museum Damage Response Team (MDRT), and FOVA staff. The FOVA Park Curator and other museum collections staff, as assigned, report to the ICS Emergency Operations Center (EOC) to:

- Serve as Technical Specialists for the Plans Section, providing input to the Incident Action Plan relating to museum collections and sites
- Report the status of response at museum collections and exhibit sites (evacuation, injuries, and emergency situations) to the Operations Section (Fire, Rescue, HAZMAT Unit)
- Report damage information from museum collections and exhibit sites to the Operations Section (Damage Assessment Unit)

The specific role of the Park Curator, also known as the Plans Section Technical Specialist (Museum Collections), with ICS and the MDRT is shown in Figure 1 and explained in detail in the following sections.

Figure 1 Reporting and Coordination between FOVA and the Emergency Operations Center



ICS, MDRT, AND FOVA STAFF RESPONSIBILITIES

ICS Plans Section

The ICS Plans Section collects, evaluates, documents, uses, and disseminates information about the emergency and the status of resources. Plans Section staff provides status information to the Incident Commander, Operations Section Chief, and Logistics Section Chief, and forecasts resource needs. Development of an effective Incident Action Plan, or modification of the plan for each operational period, depends on knowledge of what has happened and an analysis of future requirements. The members and responsibilities of the Plans Section are listed in Table 3.

Table 3 ICS Plans Section Members

TEAM MEMBER	RESPONSIBILITY
Plans Section Chief	Manages information and assists the Incident Commander in developing effective Incident Action Plans.
Situation Status Unit (SitStat)	Analyzes the situation as it progresses; records and evaluates situation status reports.
Resource Status Unit	Records the status of resources.
Technical Specialist (Museum Collections)	Serves as a technical specialist to the Incident Commander to identify critical museum resources in the affected area of the incident, assesses the impacts to museum resources, and reduces the impacts of proposed emergency repairs on museum resources. Activates the MDRT and coordinates museum collection protection and salvage.
Demobilization Unit	Develops a plan for eventual demobilization of the resources committee for the incident when such resources are no longer needed.

FOVA Staff

The FOVA Park Curator or designee is assigned to the Plans Section to serve as Technical Specialist (Museum Collections) to the Incident Commander to identify critical cultural resources, assess the impacts to cultural resources, reduce the impacts of proposed emergency repairs on cultural resources, and coordinate consultation with outside agencies. The Technical Specialist (Museum Collections) activates the MDRT and coordinates museum collection protection and salvage.

The Park Curator and others, as assigned, report to the EOC to manage the following response activities:

- Serve as the single point of contact with the EOC for FOVA museum sites
- Report emergencies at FOVA sites to the Fire, Rescue, HAZMAT Unit
- Activate the MDRT and assign the team to FOVA sites; the MDRT will not enter a building before it has been posted safe to enter by designated damage assessment personnel
- Ensure that mandatory consultations with outside reviewing agencies under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) are initiated

Following immediate public safety actions and damage assessment, FOVA museum collections staff is responsible for reporting status information to the EOC. Status information required includes:

- Damage reports on the museum buildings and exhibit sites
- Status of evacuations and other public safety measures
- Status of personnel

- Status of museum collections

Status reports are communicated by radio, messenger, telephone, or cell phone to the Plans Section Technical Specialist (Museum Collections), who takes the following actions:

- Report emergency situations to the Fire, Rescue and HAZMAT Unit
- Report building and collections damage to the Damage Assessment Unit
- When the Damage Assessment Unit has posted a FOVA museum site safe for entry, activate the MDRT

Museum Damage Response Team

The MDRT is activated by the FOVA Park Curator, also known as the Plans Section Technical Specialist (Museum Collections). Steps to activate the MDRT are as follows:

1. The City of Vancouver building damage assessment team, working in cooperation with the FOVA EOC, evaluates FOVA buildings and posts them green for "Inspected," yellow for "Limited Entry," and red for "Unsafe — Do Not Enter."
2. If the building is posted "Inspected" or "Limited Entry," FOVA personnel may be allowed to enter the building to survey damage. The Museum Collections Damage Report Form (Part 7) is used to record damage to buildings and collections.
3. Damage information is reported to the Plans Section Technical Specialist (Museum Collections) at the FOVA EOC.
4. The Plans Section Technical Specialist (Museum Collections) reports damage to the Damage Assessment Unit.
5. The Plans Section Technical Specialist (Museum Collections) activates the MDRT and assigns the team to FOVA buildings posted "Inspected."
6. The MDRT is assigned to FOVA museum sites based on damage reports and priorities established by the Plans Section Technical Specialist (Museum Collections).

Once assembled, the MDRT is responsible for managing the emergency response. The members and responsibilities of the MDRT are listed in Table 4. In summary, the MDRT should:

- Determine salvage priorities
- Stabilize the environment to prevent further damage
- Inventory damaged materials, artifacts, documents, paintings, etc.
- Organize salvage operations, including off-site storage
- Arrange for museum collections protection and restoration

Table 4 MDRT Members

TEAM MEMBER	RESPONSIBILITY
Chief, MDRT (normally the Technical Specialist)	Overall management of salvage operations; coordinates with EOC administrative offices and media; budgets allocations for wages, supplies, transportation, and services; public relations.
Recorder/Registrar (normally the Park Technician)	Damage assessment and inventory control of damaged materials and photographs; damage and recovery operation.
Work Crew Coordinator	Assembles and coordinates work crews, controls work and

	materials flow, trains work crews.

HISTORICAL PROTECTION LAWS

National Historic Preservation Act (NHPA)

The NHPA of 1966 was established by Congress to ensure identification and protection of historic properties. The Act established the National Register of Historic Places and the criteria for nominating properties for the Register, the Advisory Council on Historic Preservation as an independent federal agency, and the designation of State Historic Preservations Offices (SHPO's) appointed by the governors of each state.

Section 106 of the Act requires all federal agencies with undertakings affecting historic properties in Washington to take into account the effects of the undertaking through a consultation process with the Washington SHPO and the Council. NHPA also specifies emergency response and repair guidelines of historic properties.

NHPA Emergency Response

In the event of natural disasters (e.g., major fires, earthquakes, and windstorms), NHPA says to do the following:

1. Stabilize historic properties and prevent further damage.
2. Within 30 days after initiating repairs, the NPS will consult with SHPO, document the emergency repairs, and provide a copy of documentation to the SHPO and the Pacific West Regional Office (PWRO) Historic Preservation Officer.
3. Initiate separate authorization from the SHPO for permanent repairs.

NHPA Emergency Repairs

After a natural disaster, NHPA says the following steps should be taken to repair historic properties:

1. FOVA shall undertake emergency repairs to the subsurface infrastructure with on-site monitoring by a cultural resources specialist. Emergency repairs to historic buildings will be under the direction of the PWRO Historic Preservation Officer.

2. Documentation of the repairs is required and must be signed by the Park Superintendent and the cultural resource specialist monitoring the repairs.

Part 3 ▫ FOVA Collections, Salvage Priorities, and Staff

FOVA COLLECTIONS

The FOVA exhibit areas contain several different types of exhibit and storage cases, each with a different access point. Designated response staff must be properly trained and have the means to hastily access all exhibit areas and cases. Several sets of case keys with any other tools necessary to open them should be secured but readily available to these first responders. For security reasons, access to these sets of keys must be controlled.

Salvage operations must be documented in as detailed a manner as possible. This should include the use of photograph logs to record photographs taken during salvage operations, and the use of a Damage Report Form (Part 7). The use of such documents is essential for the accurate accounting of the collections, tracking the care of objects after salvage, and ultimately providing invaluable information for conservators working on damaged material. Also, daily records should be kept of the salvage process, such as personnel involved, time and environmental conditions during salvage, accounts of any unexpected situations, and general observations. This information will not only aid in the conservation process, but it will help provide valuable data of the EOP's effectiveness after a disaster. Figure 2 summarizes actions that should be taken by FOVA staff in the event of an emergency.

Figure 2 Immediate Collections Salvage and Protection

ON-SITE PERSONNEL IMMEDIATE ACTIONS 1. Assess damage to buildings and collections. 2. If allowed access to the building, stabilize the environment and conduct damage control.
TECHNICAL SPECIALIST (MUSEUM COLLECTIONS) 1. Obtain damage reports from on-site personnel. 2. Report damage to damage assessment unit. 3. Activate the Museum Damage Response Team.
MUSEUM DAMAGE RESPONSE TEAM ACTIONS 1. Determine salvage priorities. 2. Organize inventory control using FOVA inventory control forms (Part 7). 3. Conduct clean-up and salvage operations.

FOVA SALVAGE PRIORITIES

Priorities for salvage of museum and archive collections are determined using the following criteria.

First Priority: Materials that are impossible/difficult to replace or replicate, that are either essential for the ongoing operations of the museum, have prime research value, or significant monetary value.

Second Priority: Items that are difficult to replace or replicate and that provide significant operational or research resources.

Third Priority: Materials that can be replaced, either in original or reprographic format, or that may, if necessary, be considered expendable to the museum and its constituents.

Steps to Setting Salvage Priorities

At each FOVA site, the criteria below are used to salvage collections at the site. At some FOVA sites, the location of priority documents and collections has been developed. The MDRT and on-site personnel will refer to the priority lists when conducting salvage operations.

1. The Plans Section Technical Specialist (Park Curator) obtains collection damage reports from on-site personnel and activates the MDRT.
2. The MDRT will not enter any FOVA site that has not been posted green for "Inspected" or yellow for "Limited Entry." Buildings posted red for "Unsafe — Do Not Enter," will not be considered for collections salvage until engineers determine safety precautions.
3. The Plans Section Technical Specialist confers with on-site management to determine salvage priorities of the MDRT.

FOVA STAFF ACTIONS

As provided in the ICS, a designated individual familiar with the facility and the collections should coordinate all collections evaluations and salvage actions. In general, the following steps should be taken.

Step 1: Assess the Damage

- ***Do not reenter a damaged building until a safety inspection has been conducted by designated personnel***
- How much damage has occurred?
- What kind of damage is it (fire, smoke, soot, clean/dirty water, heat, humidity)?
- Is it confined to one area, or is the entire building damaged?
- How much of the collection has been affected?
- What types of materials have been damaged (books, documents, microfilms, photographs, computer tapes)?

- Are the damaged items easily replaced or are they irreplaceable?
- Can items be salvaged by the in-house recovery team or will outside help be required?

Step 2: Salvage Objects

If the environment in the building is stable and secure, leave undamaged objects alone; giving attention to damaged items first. If the area is not secure or stable, all objects need to be removed to a location that is secure and stable.

When salvaging objects, staff should give priority to items on the high priority list, collection records, catalogues, and other vital institutional documentation. Staff should also separate undamaged items from damaged items.

When recovering objects, staff should try to keep them in the same environment as they were found until the object is placed in a secure and stable area. This means keeping wet objects wet, damp objects damp, and not wetting objects that are dry. It is important to remember that needlessly washing an object can do more damage than leaving it soiled.

If a building is intact, an effort should be made to stabilize the environment within the building by reducing relative humidity and temperature and promoting air movement. This step will help prevent the development of mold and mildew. Because it may take a great deal of time before all items are recovered. Adjusting the environment will help the stability of objects remaining *in situ*.

If possible, all broken objects should be photographed before they are moved. This will help with conservation treatments later on. The fragments of a broken object should be collected and packed together in one container. Make sure they do not rub against each other and cause more damage.

During the salvage period, regular checks of the disaster area and the salvage storage area must be made for mold. If mold is found, handle with great care and use appropriate safety equipment. Isolate the object from others.

In the event of damage, FOVA staff should complete the steps listed below to cleanup and salvage the site. Table 5 gives a summary of specific steps depending on the type of damage incurred. For more detailed instructions organized by type of damage, see Part 4 of this document.

- Remember to shut down the gas, electricity, and water, as necessary
- Photograph damage in all areas, with the date and a size scale (where applicable)
- Assess damage and form a plan to salvage (almost everything can be salvaged, if enough time and money are spent on it)
- Keep an inventory of all losses, discards, etc. and be prepared to account for all materials after salvage is complete
- Maintain continuity of collections, especially when re-housing
- Maintain security (do not save artifacts from a fire only to let them be run over by the fire truck or stolen)
- Watch for diversions, for example, a small fire at one end of the site while a theft is occurring at the other end of the site
- Take appropriate steps to prevent spontaneous combustion
- Keep records of treatment to all collection materials

When handling objects, FOVA staff should take care to:

- Use both hands

- Do not lift any item by its handle, edge, or any other unsupported, protruding part (remember that wet objects are much heavier than they were when dry, and all objects are probably structurally much weaker)
- Lift objects by placing hands underneath them wherever possible (if an object is very thin and fragile, such as a textile or a paper document, try to insert a support underneath the object—this might be a piece of plastic-covered cardboard, or other thin and strong material)
- Place objects down in their most stable position (if broken, this may not be their normal upright position)
- Plan all of your movements; know where you will be placing an object and how it will be supported
- Do not carry too much at one time; use carts and dollies whenever possible
- Do not try to move large items by yourself
- Where possible, use the object's existing container (storage box, cabinet, drawer) to move it (this will allow for quicker retrieval, more efficient use of time, and will not use up salvage supplies unnecessarily)
- Handle objects as little as possible

Table 5 Cleanup and Salvage Operations by Damage Type

DAMAGE TYPE	CLEANUP AND SALVAGE OPERATION
Fire	1. Call 9-1-1 for fire department and/or HAZMAT Team response. 2. Do not disturb evidence of arson, etc. 3. Modify standard mop-up procedures to allow for the nature of the collection. 4. Clean up the aftermath using procedures for water damage, if appropriate. Dry chemical debris can be vacuumed up as soon as possible, using curatorial vacuuming techniques.
Flood	1. Watch for hidden hazards such as live electrical wires. 2. Evaluate the situation and choose priorities. Mold may start to develop within 48 hours. Remove standing water to lower the relative humidity. Keep air circulating to prevent pockets of stagnant air. Some artifacts may need to be tended to prevent drying too quickly. 3. Use specific techniques of salvage for each type of artifact.
Liquid attack (acids, bases, solvents)	1. Call 9-1-1 for fire department and/or HAZMAT Team response. 2. Act quickly and avoid contact with the unknown liquid which could be harmful (sulfuric acid, lye, or gasoline, for example). 3. Small, localized damaged areas should be rinsed well with water. Water will neutralize acids or bases, and will slow severe etching of the surface. Large objects will have to be rinsed with copious amounts of water. **Do not do this in a closed environment without knowledge of the substance involved.** 4. Consult a conservator.

Table 5 Cleanup and Salvage Operations by Damage Type (continued)

DAMAGE TYPE	CLEANUP AND SALVAGE OPERATION
Broken objects	1. Cordon off the area and photograph the object *in situ*. If possible, do not touch anything until a curator arrives. If pieces must be moved, carefully collect all fragments, bag, label, and keep them with the object until they can be turned over to a conservator. 2. Count and save all the fragments, and as many chips as possible and handle the pieces as little as possible. Any dirt, dust, or abraded surfaces will impede a successful repair. Each fragment should be stored separately in a small, individual box or a clear plastic bag that is labeled. Fragments can be stored in a padded tray and should be placed well apart from each other so they do not rub together. If the pieces must be transported, wrap each piece in soft tissue and identify it with a label.
Theft	1. Do not touch anything if you think there has been a robbery. 2. Contact the City of Vancouver Police Department. 3. Be certain to obtain a police incident number and copies of all documents. 4. Photograph and write a report of the aftermath.

Step 3: Organize Inventory Control

If a damaged collection must be dispersed to storage in several locations, and if treatment and restoration are to be conducted in priority order for re-shelving, an inventory is necessary. Knowing what is in each storage box and where that box is located becomes essential to timely and efficient recovery. The FOVA inventory control system and forms were developed at the National Archives and Records Administration, San Francisco Office. Three forms and levels of information are used. All forms can be found in Part 7.

1. **Records Disaster Packout Inventory Sheet**. Summary box listing that is adequate for most records.

2. **Supplemental Single Box Inventory.** Used to note special conditions and list folder titles when necessary. To be used when files are not self-indexing, where finding aids are inadequate, or where the event has caused disarrangement of the records.

3. **FOVA Inventory Control System Forms.** Use these forms when damaged collections need to be documented as the result of a disaster. This is especially important if collections are moved from their original locations or recovered from a location after a disaster, (off the floor, for example), and are to be dispersed to new storage areas. Another important reason to use the Inventory Control System and forms is to prioritize treatment and restoration of affected collections.

Part 4 ◘ Salvage Procedures by Type of Damage

FOVA staff should consult these salvage procedures, sorted here by material type and damage, in the event of an emergency. Damage done by fire and smoke, water, breakage, mud and debris deposition, dust, vapor, gases, and hazardous material are included. In the event of vandalism, terrorism, or acts of civil disobedience, the outlined salvage procedures that best match the type of damage should be followed. Likewise, choose the best procedural match for damage from volcanic activity. Tables 6 through 10, after each relevant section, summarize salvage procedures by type of damage. In all cases, seek a conservator's advice as soon as possible.

FIRE

Common Fire Damage

- Consumption and loss of materials, particularly organic materials
- Embrittlement of most organic materials
- Explosions due to nitrate fires, leading to structural collapse and collection loss
- Fading of pigments and dyes
- Accelerated aging of materials not consumed by the fire
- Loss or damage of museum records, park records, archives, and manuscript collections
- Melting
- Mold, insect, and vermin outbreaks and water damage following fire fighting
- Oxidation of metals
- Scorching or charring of wood, paper, textiles (soot may be carcinogenic, requiring professional abatement)
- Staining of all materials from smoke and water
- Subsidiary water damage due to fire suppression

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items using the Damage Report Form (Part 7) noting personnel who removed the items and their current location.
- Plastic sheeting should not be used to protect objects during a fire; polyester sheets (such as Mylar, which has a very high melting point) can be used (time permitting) to protect from water and chemicals used in fighting fires.

Salvage Procedures

Table 6 also summarizes fire salvage procedures.

METALS

- Take care that metals are not too hot to handle. Use thick gloves when retrieving metal items. Many metals at FOVA have been coated with a wax as part of their conservation treatment. After a fire this may have changed the appearance of a metal object leaving it slightly greasy if still hot, or covered with a white haze, or "bloom," if it has cooled sufficiently. Do not try to remove this bloom by scraping, rubbing, use of solvents, or re-heating.
- Pack in bags and boxes, avoiding direct contact between individual objects by using tissue paper and other padding material. Preventing objects from touching each other directly will greatly reduce the chance of further damage occurring during removal from the site.

- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and horizontal, and seek a conservator's help as soon as possible.
- If surfaces are flaking, keep object horizontal and place nothing on top of it.
- Objects made of lead should not be packaged in organic materials (paper bags, cardboard boxes, etc.), inert plastic containers should only be used.
- Do not wash object if it is dry. Many metals, especially archaeological ones, can be subject to aggressive corrosion if they are wet, and once corrosion has begun it can be hard to re-stabilize. Avoid all temptation to wash dry metals to remove debris and dirt. Robust objects can be brushed with a soft bristle brush to remove surface grime and dirt.
- If packing multiple items in one container, place heaviest at the bottom, with lighter objects on top. Do not over pack a container — it must be easy to reach and inspect items at the bottom of the box.

CERAMICS, GLASS, AND STONE

- These inorganic materials do not burn, but if a fire rages long enough they can char, craze, or melt.
- These materials may have become very brittle and fragile, so take care not to further damage them during salvage. Pack in bags and boxes, making sure that items do not directly contact each other.
- Fragile fragments of ceramics and glass may be best packed in bags and then placed vertically in a container. This will prevent the accumulated weight of items in the upper part of a container from crushing fragile pieces below them. It also helps to prevent inadvertent over packing of boxes by pushing down items to fit more in.
- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and seek a conservator's help as soon as possible.
- If surfaces are flaking, keep the object horizontal and place nothing on top of it.
- Do not wash object if it is dry. Robust objects can be brushed with a soft bristle brush to remove surface grime and dirt.
- If packing multiple items in one container, place heaviest at the bottom, with lighter objects on top. Do not over pack a container; it must be easy to reach and inspect items at the bottom of the box.
- Stone items can be very heavy; avoid over packing containers and piling objects on top of each other.

WOOD

- Wooden items that have been fire damaged are likely to be very friable and fragile — if they have survived at all. Provide such items with lots of padding.
- Small wooden items can be placed in boxes vertically to prevent crushing from items above them.
- Watch for surface treatments such as paint, and make sure that these surfaces are protected and do not become abraded during salvage.
- Do not wash or otherwise dampen dry wooden objects. Such action may cause irreparable cracking, warping, and other structural damage to the object.
- Do not attempt to clean wooden objects.

ORGANICS (leather, hide, fur, feathers, bone, horn, basketry, etc.)

- Organic items that have been fire damaged are likely to be very brittle and fragile — if they have survived at all. Provide such items with lots of padding.
- Small organic items can be placed in boxes vertically to prevent crushing from items above them. Larger items should be packed flat. Or in whatever position seems to provide them with maximum structural stability.
- Items such as shoes, bags, and hats, should be stuffed with tissue paper to provide internal support. Be careful not to over stuff items — only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Do not wash or otherwise dampen dry organic objects. Such action may cause irreparable cracking, warping, and other structural damage to the object.
- Larger items, such as furs, should be moved by introducing a support, such as a plastic-covered board, underneath them and lifting the object by the board, not by directly handling the object.
- Do not attempt to clean organic objects.

TEXTILES

- Textile items that have been fire damaged are likely to be very brittle and fragile — if they have survived at all. Provide such items with lots of padding.
- All textile items should be lifted and packed flat with support below them (such as a plastic-covered board). Never lift a textile by its edge — the weight of the object is likely to cause it to tear, especially if the fabric has been embrittled by heat and other fire-related conditions.
- Items such as shoes, bags, and hats, should be stuffed with tissue paper to provide internal support. Be careful not to over stuff the item — only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Avoid stacking textiles one on top of another.
- Do not wash or otherwise dampen any textile objects. Such action may cause irreparable damage to the object, including the bleeding of dyes and even disintegration.
- Larger items, such as blankets or quilts, should be moved by introducing a support, such as a plastic-covered board, underneath them and lifting the object by the board, not by directly handling the object.
- Do not attempt to clean textiles.

PAPER (books, documents, art on paper)

- Paper items that have been fire damaged are likely to be very brittle and fragile — if they have survived at all. Provide such items with lots of support.

- All paper items should be lifted and packed flat with support below them, such as a plastic-covered board or non-metallic screen mesh stretched over a frame. Never lift paper by its edge — it is likely to cause it to tear, especially if the paper has been embrittled by heat and other fire-related conditions.
- If paper items have become stuck together (possibly the fusing of plastic sleeves in which they were stored), do not try to separate them. Lift fused material as one block.
- Avoid stacking paper too high — paper is very heavy and damage can be done to items at the bottom of the pile due to the weight and movement of material on top.
- Do not wash or otherwise dampen any paper objects. Such action may cause irreparable damage, including the bleeding of dyes and even disintegration.
- Do not attempt to clean paper.

PHOTOGRAPHIC MATERIALS

- Photographic items that have been fire damaged are likely to be very brittle and fragile — if they have survived at all. Provide such items with lots of support.
- All photographic items should be lifted and packed flat with support below them, such as a plastic-covered board or non-metallic screen mesh stretched over a frame. Never lift a photograph by its edge — it is likely to cause it to tear, especially if the photograph has been embrittled by heat and other fire related conditions.
- Do not touch the surface of the image of a photograph. This may cause damage to the image.
- If photographic items have become stuck together, do not try to separate them. Lift fused material as one block.
- Avoid stacking items too high — photographs are very heavy and damage can be done to items at the bottom of the pile due to the weight and movement of material on top
- Do not wash or otherwise dampen any photographic materials. Such action may cause irreparable damage.
- Do not attempt to clean photographs.

ELECTRONIC MEDIA

- Items that may have fused together should not be separated.
- Avoid touching any surfaces that are key to data recording, such as the recorded surface of CDs and the surfaces of magnetic tapes.
- Avoid scratching the data surfaces of electronic media.

SMOKE

Common Smoke Damage

- Staining of surfaces, especially paper, textiles and photographs
- Deposition of soot and other particulate matter

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location
- Cover collections with plastic sheeting to prevent dust from falling onto objects.
- Turn off all heating, ventilation and air conditioning (HVAC) units that introduce outside air into the building. Do not turn HVAC units back on until the threat of dust has passed and particulate filters on the units have been checked and replaced with screens that can filter out fine particulate matter.
- Seal all doors, windows, ducts, valves, and vents that allow outside air to enter the building.

Salvage Procedures

The nature of the smoke (whether it is from a chemical fire, wildland fire, explosion, etc.) will determine the likely damage caused to objects and the procedures needed to handle damaged objects. For this reason it is very difficult to give exact guidelines for each material type. Table 6 summarizes smoke salvage procedures.

Most smoke damage involves deposits that are difficult to remove with ease and should therefore be treated with the help of a conservator.

In general the following procedures should be followed for all materials:

- Do not mix smoke contaminated materials/objects with any that have escaped such damage.
- If items are wet and smoke deposits can be removed using the procedures recommended for water damaged objects (see above), then rudimentary cleaning can take place. If these methods are unsuccessful at reducing deposits the objects should be air dried if necessary and packaged to await treatment by a conservator.

Table 6 Fire and Smoke Damage Salvage Procedures

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Metals	Dry within 48 hours if damp.	Metals may be very hot; wait until cold. Watch for fragile and loose surfaces. Do not wash if metals are dry.	Pad well. Allow air circulation to avoid moisture condensation. Lead objects should not be packed in organic materials (paper, cardboard).
Ceramics, glass, stone	Start drying within 72 hours if damp.	Ceramics and glass are likely to be fragile and brittle; possibly sharp. Watch for applied surfaces flaking. Do not wash if objects are dry.	Pad well. Small fragments of ceramics and glass can be packed on edge to prevent crushing. Stone items are heavy; do not over pack containers.
Wood	Freeze or start drying within 48 hours if damp. Do not freeze furniture without conservator's advice.	Objects likely to be very fragile. Watch for paint on surfaces. Do not wash if dry.	Pad well.
Organics (leather, hide, fur, feathers, bone, horn, basketry, etc.)	Freeze or start drying within 48 hours if damp.	Objects are likely to be fragile and brittle. Do not unfold furs or pieces of leather. Lift large items with supports.	Pad well. Pack large objects (furs, hides, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.

Table 6 Fire and Smoke Damage Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Textiles	Freeze or start drying within 48 hours if damp.	Objects are likely to be fragile and brittle. Do not unfold textiles. Lift large items with supports. Avoid stacking items on top of each other. Do not wash textiles.	Pack large objects (blankets, quilts, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Paper	Freeze or dry within 48 hours if damp.	Likely to be fragile and brittle. Do not try to separate single sheets of paper. Keep books closed if possible. Do not wash to clean.	If fragile, pack flat with support underneath. Avoid over packing boxes. Pack books with spines down in boxes.
Photographic materials	Seek conservator's advice at once. Do not freeze any materials without first consulting a conservator.	Likely to be fragile and brittle. Do not try to separate single photos if stuck together. Do not wash to clean. Do not touch image area.	If fragile, pack flat with support underneath. Avoid over packing boxes.
Electronic media		Keep away from magnetic sources. Avoid scratching surfaces. Do not try to separate items that may have fused together.	Pack in clean containers.

WATER

Common Water Damage

- Adhesion of art, book, paper, and photographic items to other objects or organic materials
- Bleeding of color from one object to another
- Corrosion and rusting of metals
- Erosion of stone or masonry
- Finish loss on art works, photographs, textiles, and wood
- Lifting of veneers on furniture
- Loss or damage to museum records, park records, museum archives, and manuscript collections
- Loss of dimensional stability of paper, textiles, and wood
- Mineral deposits on ceramics, metal, meteorites, minerals, and stone
- Molding and rotting of animal and botanical specimens, books, furniture, paper, parchment, photographs, textiles, and vellum
- Pigment and dye loss on art works, books, paper, photographs, and textiles
- Ripping or splitting of animal skins, paper, photographs, and fragile textiles
- Separation of emulsion layers on photographs
- Splitting of skins and leather on bound volumes
- Staining and deposition of contaminants on bone, ivory, paper, shell, and textiles
- Structural integrity loss for paper, plaster objects, and textiles
- Swelling and pressure damage that cracks or destroys nearby objects
- Warpage of board, paper, thin sections, and wood
- Weakening of fibers for paper, textiles, and some wood

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location. In the case of a pending flood, this should be a location on high ground.
- Document removal of items (personnel who removed them, date, and location).
- Locate collections in buildings with good structural seals (including a sound and sealed roof, windows, and basements).
- Keep all storage equipment at least 4 inches off the floor (preferably 6 inches).
- Use only spaces that will not flood if pipes break or drains back up.
- Protect ceramic, glass, and stone objects from water leaks by covering them with plastic sheets or bags (a little water may not be harmful, but uneven wetting can cause mineral migration in stone, resulting in stains, as well as streaking through surface grime layers that can be difficult to correct; painted pieces, unfired clay, or deteriorated stone and glass would suffer greater damage from water; the plastic should not be completely sealed, as this would stimulate mold growth).
- Move furniture only if absolutely necessary (moving furniture subjects it to potential damage; some emergency situations may not necessitate moving the entire collection from the affected space, so long as the water can be removed quickly. If the collection must be moved, follow appropriate handling and moving techniques).
- Raise objects off the floor onto blocks or skids if rising water is a problem; have "dry areas" designated for object removal in cases where an entire floor or storeroom is flooded.

Salvage Procedures

Table 7 summarizes water salvage procedures.

METALS

- Most metals are not as easily damaged by water as are some other types of artifacts. They should be protected from freezing when wet, as water in cracks and crevices will expand when frozen, possibly causing spalling and cracking.
- Metal artifacts should be superficially cleaned and dried as soon as possible. Avoid rubbing or scrubbing surfaces; instead, blot them with sponges and towels using a minimum of water to rinse object.
- Ferrous metals will rust when they are wet or in high-humidity environments. Likewise, other metals will show accelerated corrosion. Therefore all metals should be dried with air as soon as possible. Do not use direct sources of heat (such as heaters, blow dryers, or sunlight) to speed drying. As time allows, corrosion can be removed and protective barriers applied to prevent further corrosion (wax, lacquer).
- Many metals at FOVA have been coated with a wax as part of their conservation treatment. If exposed to extreme water inundation and heat this coating may have changed the appearance of a metal object leaving it covered with a white haze, or "bloom." Do not try to remove this bloom by scraping, rubbing, use of solvents, or by heating.
- Pack in bags and boxes, avoiding direct contact between individual objects by using tissue paper and other padding material. Preventing objects from touching each other directly will greatly reduce the chance of further damage occurring during removal from the site.
- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and horizontal, and seek a conservator's help as soon as possible.
- If surfaces are flaking, keep object horizontal and place nothing on top of it.
- Objects made of lead should not be packaged in organic materials (paper bags, cardboard boxes, etc.); inert plastic containers should only be used.
- If packing multiple items in one container, place heaviest at the bottom with lighter objects on top. Do not over pack a container — it must be easy to reach and inspect items at the bottom of the box.
- Bare metal will not mold, as it contains nothing for the mold to feed on. However, coated metal may develop mold, as the coating may provide a food source (paint). Likewise, dirt and soil stuck to surfaces. This should not harm the metal itself, but may it destroy the coating.
- Seek a conservator's help as soon as possible.

CERAMICS, GLASS, AND STONE

- Ceramics, glass, and stone should be rinsed carefully under a gentle stream of clean running water and then slowly air dried. Do not use direct sources of heat or sunlight to accelerate drying, as this may cause cracking or soluble salt migration. Consider using plastic screens for drying as this allows maximum air circulation around objects.

- Fragile fragments of ceramics and glass may be best packed in bags and then placed vertically in a container. This will prevent the accumulated weight of items in the upper part of a container from crushing fragile pieces below them. It also helps to prevent inadvertent over packing of boxes by pushing down items to fit more in.
- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and seek a conservator's help as soon as possible.
- If surfaces are flaking, keep the object horizontal and place nothing on top of it.
- If packing multiple items in one container, place heaviest at the bottom with lighter objects on top. Do not over pack a container — it must be easy to reach and inspect items at the bottom of the box.

- Stone items can be very heavy so avoid over packing containers and piling objects on top of each other.
- Do not freeze wet ceramics, glass, or stone as a stabilization/storage method without first consulting a conservator. These materials can be badly damaged by freezing.
- Seek a conservator's help as soon as possible.

WOOD

- Do not dry wet wood too quickly. Remove all the water on and around the object as soon as possible. Lower the relative humidity level slowly to acceptable levels. It may be necessary to cover affected objects with a polyethylene tent to ensure slow drying. Do not use direct sources of heat (such as heaters, blow dryers, or sunlight) to speed drying.
- With furniture, remove drawers and open doors if possible, so as to even out the drying process on all surfaces. If drawers and doors stick due to swelling, do not force them open.
- Block **all** objects up from the floor so that the water will not migrate up the feet and legs. This technique will facilitate drying of the bottom surfaces.
- Use fans to provide good ventilation and thus decrease the likelihood of mold growth, but do not aim the fans directly at furniture and objects as this may accelerate and cause uneven drying.
- If mud or plaster has been deposited on wood surfaces, it can be sponged off with clean, cool water. The sponging action should be gentle. Avoid wiping the surface with a gritty sponge. Rinse the sponge often. Do not try to remove the deposits with a dry cloth, because this action can result in abrading the surface. Wait for a conservator's assistance in the removal of mud and plaster from fragile and unstable finished surfaces, such as gold leaf.
- Upholstered furniture should be wrapped in clean cloths to draw out and absorb moisture. The cloths should be changed regularly once damp and replaced with dry ones until all excess water has been absorbed.
- If furniture has cushions that can be freely removed, they should be carefully pulled out and dried separately. This will also aid in more even drying of the furniture frame.
- Small wooden items may be frozen if the drying process cannot be started within 48 hours. However, furniture and objects of composite materials should not be frozen, as irreparable damage can occur.
- Seek a conservator's help as soon as possible.

ORGANICS (leather, hide, fur, feathers, bone, horn, basketry, etc.)

- Rinse with clear running water to remove dirt and debris; blot excess moisture with lint free cloths, paper towels, or sponges. Do not rub or scrub surfaces.
- Items such as baskets, shoes, bags, and hats should be stuffed with tissue paper to provide internal support and to help draw out moisture from internal surfaces. Be careful not to over stuff items — only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Do not dry out wet organic objects too quickly. Remove all the water on and around the object as soon as possible. Lower the relative humidity level slowly to acceptable levels. It may be necessary to cover affected objects with a polyethylene tent to ensure slow drying. Do not use direct sources of heat (such as heaters, blow dryers, or sunlight) to speed drying. Consider drying organic materials on non-metallic screening material to enable even drying and good air circulation around objects.
- Use fans to provide good ventilation and thus decrease the likelihood of mold growth, but do not aim the fans directly at objects as this may accelerate and cause uneven drying.

- Small organic items can be placed in boxes vertically to prevent crushing from items above them. Larger items should be packed flat. Or in whatever position seems to provide them with maximum structural stability.
- Do not place other objects inside one another at anytime, for example do not put small organic objects inside baskets.
- Larger items, such as furs, should be moved by introducing a support, such as a plastic-covered board, underneath them and lifting the object by the board, not by directly handling the object itself.
- Organic materials can be frozen if the drying process cannot be started within 48 hours.
- Seek a conservator's help as soon as possible.

TEXTILES

- Textiles lose strength when wet. Weight will increase from water absorption, requiring further care in handling. Never pick up textiles by their edges as they are likely to tear.
- Fresh stains and bleeding dyes will be permanently set if they are allowed to dry. Wet cleaning before drying will be necessary and will require assistance/advice from conservators. If more than a couple of artifacts have been water damaged, the textiles should be frozen until adequate time and trained personnel are available.
- Textiles may be dried slowly if they are not soiled. They should be supported while drying, using screens, inert plastic, or toweling. Water may be blotted or pressed out (by hand, not with an iron). Textiles should never be wrung out.
- Block and shape objects to their original shape and size without forcing them and before drying.
- Items such as shoes, bags, costumes, and hats should be stuffed with tissue paper to provide internal support and to help draw out moisture from internal surfaces. Be careful not to over stuff items — only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Textiles used as upholstery should be dried very slowly in place on the furniture (as is also suggested for the furniture frames) to avoid shrinking and splitting. In order to slow down evaporation, objects may need to be wrapped in plastic sheeting. However, care must be taken to avoid mold growth.
- Do not unfold wet fabrics as they easily tear. Likewise, do not stack wet textiles on top of each other as the lower layers can be crushed by the weight. Drying becomes more difficult and the chance for mold grow and dye transfer between textiles also increases.
- Items may be frozen if the drying process cannot be started within 48 hours.
- Seek a conservator's help as soon as possible.

PAPER (books, documents, art on paper)

- Handle books, papers, and art on paper very carefully — paper tears very easily when wet. Do not try to open or close wet books. Books from the museum collection should be treated as artifacts; the whole is important, not just the contents. Do not remove covers.
- Books and papers on coated stock (shiny, slick feeling) will fuse together if allowed to dry naturally. They should be frozen and can later be freeze-dried easily. If it is not possible to freeze coated paper items, each page must be interleaved. Pages not interleaved will probably be permanently stuck together. It may be necessary to leave coated books and papers under water until a few hours before they can be frozen or interleaved.
- Mold will start on the outer edges of shelved books first. Refrain from opening books or taking them off the shelves until mold can be controlled.

- Mud and muck on the outside of closed books can be removed in large part before freezing, using water and sponges with a dabbing motion. Hold books closed during this process. Do not rub mud into the book. Mud and mold will be more easily removed after drying (remove only large deposits of mud). Exception: fine silt, such as from flooding river water, will be more easily removed before drying.
- Do not attempt to clean paper documents or works of art on paper. Freeze and seek the help of a conservator.
- If books are partially wet or damp, and are reasonably clean, stand them on their top or bottom edge, open to approximately 90° and allow them to air dry.
- If books are very wet, lay them flat and interleave no more than 20% of the book with absorbent material, replacing it regularly when it gets damp.
- If there are too many books to dry within 48 hours, items should be frozen for later treatment. They should be wrapped in wax or freezer paper and packed spine down in sturdy containers prior to freezing.
- Artifacts with water-soluble inks should be frozen as soon as possible to minimize bleeding and transferring. Do not wash or rinse before freezing.
- If freezer space cannot be located, books will have to be dried on-site, as quickly as possible. Warm, moist stagnant air will increase chances of mold. Separate sheets should be separated, using plastic film to ease each sheet away from others and to provide support. Very wet books should be placed on end to drain before attempting to open. If they can be opened without damage (no more than 1/3 of the thickness of the book), blank newsprint or paper towels are good for interleaving. If necessary, printed newspaper can be used as a last resort. Do not use the colored sections and use papers that are at least 24 hours old— giving the ink a chance to set.
- Sheets of paper and documents should be dried individually or as small piles, up to 1/4-inch thick, interleaved with wax or freezer paper.
- Do not unfold or separate individual sheets of paper as they are likely to be very fragile and tear.
- If too many paper items exist to be dried in 48 hours, material should be frozen for later treatment. This should be done by packing supported sheets on end in a sturdy box, filling it only 90% full (this allows for expansion during freezing and easy extraction of individual items).
- Framed works of art on paper should be removed from their frames before freezing.
- Newly dried materials should not be put back into storage with undamaged artifacts. If possible, they should be segregated for six months; with frequent checks to be sure they are stable.
- Seek the advice of a conservator.

PHOTOGRAPHIC MATERIALS

Because of the number of photographic processes and their wide variety, responsible advice for emergency salvage of wet photographs and negatives is difficult to provide. In general, wet photographs should be air dried or frozen as quickly as possible. Once stabilized by either of these methods, there is time to decide what future course of action to pursue. In general, follow the guidelines listed below.

- Do not touch emulsion side (normally the side with the image); hold it by the edges or margins. Always lay photographic materials with the emulsion side (image side) up.
- Photographs in water will quickly deteriorate; images can separate from mounts, emulsions can dissolve away or stick together, or staining can occur. Mold is another problem. Mold begins to grow within 48 hours at 60% relative humidity and 70° F. Mold often causes

permanent staining and other damage to photographs. If photographs cannot be dried fairly quickly, they should be frozen.

- Mold will not grow when materials are completely immersed in water. In some cases, it might be best to leave photographs immersed if they cannot be dried or frozen immediately.
- Photographic materials can be gently rinsed under clean running water. Do not brush or rub any surfaces.
- Photographic materials can be air dried by hanging from lines using small clips or clothes pegs, making sure that the clips do not touch the image areas. They can also be laid flat on absorbent material or screening; image side up. Make sure that the emulsion sides of the photographs do not touch each other or any other material.
- Do not touch or blot surfaces.
- Photographs should not be allowed to dry unless they have been separated from their housings (paper or plastic enclosures or frames) and each other. All frames and housing materials should be saved as they often carry important cataloging and inventory information. Wet emulsion will adhere to whatever it is touching. If wet photographs cannot be attended to within 48 hours, they should be bagged in plastic to retain moisture and refrigerated, if possible, to inhibit mold.
- If photographic materials cannot be dried within 48 hours they should be frozen for later treatment. This can be done by interleaving each item with wax or freezer paper and then placing them in small groups in sealed plastic bags.
- Due to the huge variety of types of materials associated with photographic collections, the need to contact an experienced conservator is extremely important.

ELECTRONIC MEDIA

- In general these materials can be rinsed in clean running water. Do not scrub or rub surfaces.
- Do not use magnetic tools near these media.
- Air dry on racks and re-house in clean containers or cases.
- Seek the advice of a conservator.

Table 7 Water Damage Salvage Procedures

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Metals	Dry immediately. Do not freeze.	Wet metals are likely to corrode rapidly. Rinse with clean water. Do not use direct heat to speed up drying. Watch for fragile surfaces.	Pad well. Allow air circulation to avoid moisture and condensation. Lead objects should not be packed in organic materials (paper, cardboard).
Ceramics, glass, stone	Start drying within 72 hours.	Ceramics and glass are likely to be fragile and brittle; possibly sharp. Watch for applied surfaces flaking. Rinse with clean water. Do not use direct heat to speed drying.	Pad well. Small fragments of ceramics and glass can be packed on edge to prevent crushing. Stone items are heavy; do not over pack containers.
Wood	Freeze or start drying within 48 hours. Do not dry too quickly. Do not freeze furniture without conservator's advice.	Objects likely to be very fragile. Watch for paint on surfaces. Dry slowly. Watch for warping, racking, and distortion during drying. Rinse with clean water. Do not use direct heat to speed drying.	Pad well.

Table 7 Water Damage Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Organics (leather, hide, fur, feathers, bone, horn, basketry, etc.)	Freeze or start drying within 48 hours.	Objects are likely to be fragile, weak, and heavy (especially leather and furs). Do not unfold furs or pieces of leather. Dry slowly. Watch for warping, racking, and distortion during drying. Lift large items with supports. Rinse with clean water. Do not use direct heat to speed drying.	Pad well. Pack large objects (furs, hides, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Textiles	Seek a conservator's help immediately. Freeze within 48 hours if treatment advice not available.	Objects are likely to be fragile and very weak and heavy. Do not unfold textiles. Lift large items with supports. Avoid stacking items on top of each other. Do not wash textiles.	Pack large objects (blankets, quilts, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.

Table 7 Water Damage Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Paper	Freeze or dry within 48 hours if damp.	Likely to be fragile, weak, and easily torn. Do not try to separate single sheets of paper. If necessary, rinse books with clean water; keeping them closed. Do not clean works of art on paper or paper sheets. If air drying books, prop open slightly while standing on end or interleave with absorbent materials.	Pack flat with support underneath. Avoid over packing boxes. Interleave with wax or freezer paper. Pack books with spines down in boxes.
Photographic materials	Seek conservator's advice at once. Do not freeze any materials without first consulting a conservator.	Likely to be fragile, weak, and easily torn. Do not try to separate single photos if stuck together. Rinse with clean water. Do not touch image area.	Pack flat with support underneath. Avoid over packing boxes.
Electronic media	Dry within 48 hours. Do not freeze.	Keep away from magnetic sources. Avoid scratching surfaces. Rinse with clean water. Do not try to separate items that may have fused together.	Pack in clean containers.

BREAKAGE

Common Breakage Damage

- Shattering of object into multiple fragments
- Cracking and fracturing of object; weakening it structurally
- Scattering of object fragments
- Loss of parts of object

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location).

Salvage Procedures

In all cases of breakage, take a photograph of the broken object *in situ* prior to recovering any fragments. This will help with the reconstruction of the object during conservation. Never attempt to mend or reconstruct without first seeking the advice of a conservator. Table 8 summarizes breakage salvage procedures.

METALS

- Pack each fragment carefully; making sure to label it so that it can be correctly identified should it become separated from the rest of the object.
- If possible, pack all fragments of an individual item together (thus minimizing the chance of losing fragments) making sure that they do not directly touch each other causing further damage to the object.

CERAMICS, GLASS, AND STONE

- Pack each fragment carefully; making sure to label it so that it can be correctly identified should it become separated from the rest of the object.
- If possible, pack all fragments of an individual item together, thus minimizing the chance of losing fragments, making sure that they do not directly touch each other causing further damage to the object. Glass and ceramics can be packed on edge to minimize the risk of crushing each other. However, if pieces are too fragile, laying them flat may be preferable. Do not stack fragments on top of another.

WOOD

- Pack each fragment carefully; making sure to label it so that it can be correctly identified should it become separated from the rest of the object.
- If possible, pack all fragments of an individual item together, thus minimizing the chance of losing fragments, making sure that they do not directly touch each other causing further damage to the object.

ORGANICS (leather, hide, fur, feathers, bone, horn, basketry, etc.)

- With the exception of bone and horn, due to the nature of these materials, they are unlikely to break but rather to tear. If this occurs, provide the object with maximum support to prevent the tear from becoming worse.
- Three-dimensional objects, such as shoes, clothing, baskets, and bags, should be lightly stuffed with tissue paper to provide internal support.
- If fragments of the object have become detached, these should be gathered together, packed individually, labeled, and salvaged with the rest of the object.

TEXTILES

- Due to the nature of these materials, they are unlikely to break but rather to tear. If this occurs, provide the object with maximum support to prevent the tear from becoming worse.
- Three-dimensional objects, such as shoes, clothing, and bags, should be lightly stuffed with tissue paper to provide internal support.
- Make sure to provide maximum support for textiles by being careful not to handle them by their edges, and to carry them flat on boards or similar devices.
- If fragments of the object have become detached, these should be gathered together, packed individually, labeled, and salvaged with the rest of the object.

PAPER (books, documents, art on paper)

- Due to the nature of these materials, they are unlikely to break but rather to tear. If this occurs, provide the object with maximum support to prevent the tear from becoming worse.
- Make sure to provide maximum support for paper by being careful not to handle them by their edges, and to carry them flat on boards or similar devices.
- If fragments of the object have become detached these should be gathered together, packed individually, labeled, and salvaged with the rest of the object.
- If the damaged object is within a frame, attempt to carefully move the object in its frame to prevent further damage while trying to remove it. However, if keeping it in its frame poses a threat to the condition of the piece, it should be removed; keeping the separated frame with the damaged item as the two together comprise one object.

PHOTOGRAPHIC MATERIALS

- Due to the nature of these materials, they are unlikely to break but rather to tear. If this occurs, provide the object with maximum support to prevent the tear from becoming worse.
- Make sure to provide maximum support for photographs by being careful not to handle them by their edges, and to carry them flat on boards or similar devices.
- If fragments of the object have become detached these should be gathered together, packed individually, labeled, and salvaged with the rest of the object.
- If the damaged object is within a frame, attempt to carefully move the object in its frame to prevent further damage while trying to remove it. However, if keeping it in its frame poses a threat to the condition of the piece, it should be removed; keeping the separated frame with the damaged item as the two together comprise one object.

Table 8 Breakage Salvage Procedures

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Metals	Salvage as soon as possible, especially if wet.	If possible, photograph broken object *in situ* before salvaging. Watch for sharp edges. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pad well. Allow air circulation to avoid moisture and condensation. Lead objects should not be packed in organic materials (paper, cardboard).
Ceramics, glass, stone	Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Watch for sharp edges. Check for collection of all fragments. Do not try to repair without a conservator's help. Check for collection of all fragments.	Pad well. Small fragments of ceramics and glass can be packed on edge to prevent crushing. Stone items are heavy; do not over pack containers.
Wood	Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pad well.

Table 8 Breakage Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Organics (leather, hide, fur, feathers, bone, horn, basketry, etc.)	Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pad well. Pack large objects (furs, hides, etc.) flat. Stuff three dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Textiles	Seek a conservator's help immediately. Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pack large objects (blankets, quilts, etc.) flat. Stuff three dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Paper	Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pack flat with support underneath. Avoid over packing boxes. Interleave with wax or freezer paper. Pack books with spines down in boxes.

Table 8 Breakage Salvage Procedures (continued)

MATERIAL DAMAGED	**PRIORITY**	HANDLING PRECAUTIONS	PACKING METHODS
Photographic materials	Seek conservator's advice at once. Salvage as soon as possible.	If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help. Do not touch image area.	Pack flat with support underneath. Avoid over packing boxes.
Electronic media	Seek a conservator's advice as soon as possible.	Keep away from magnetic sources. Avoid scratching surfaces. If possible, photograph broken object *in situ* before salvaging. Check for collection of all fragments. Do not try to repair without a conservator's help.	Pack in clean containers.

MUD AND DEBRIS DEPOSITION

Common Mud and Debris Deposition Damage

- Staining of surfaces, especially papers, textiles, and organic materials
- Abrasion of surfaces
- Introduction of ingrained dirt into porous and absorbent materials
- This type of damage occurs in association with water damage, either as a direct result of a disaster (such as a landslide), or as a result of responding to a disaster (for example mud and debris deposition from fire fighting activities)

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location (in the case of a pending flood, this should be a location on high ground).
- Document removal of items (personnel who removed them, date, and location).
- Remove objects to a safe and secure location well away from anticipated disaster area.

Salvage Procedures

Table 9 summarizes mud and debris deposition salvage procedures.

METALS

- If wet, metal artifacts should be superficially cleaned and dried as soon as possible. Avoid rubbing or scrubbing surfaces; instead, blot them with sponges and towels, using a minimum of water to rinse object.
- Air dry, keeping objects away from direct sources of heat (such as heaters, ovens, and direct sunlight).
- Do not wash object if it is dry. Many metals, especially archaeological ones, can be subject to aggressive corrosion if they are wet; once corrosion has begun it can be hard to re-stabilize. Therefore, avoid all temptation to wash dry metals to remove debris and dirt. Robust objects can be brushed with a soft bristle brush to remove surface grime and dirt.
- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and seek a conservator's help as soon as possible.
- If surfaces are flaking, keep object horizontal and place nothing on top of it.
- If packing multiple items in one container, place heaviest at the bottom, with lighter objects on top. Do not over pack a container; it must be easy to reach and inspect items at the bottom of the box.
- Seek a conservator's help as soon as possible.

CERAMICS, GLASS, AND STONE

- If wet, ceramics, glass, and stone should be rinsed carefully under a gentle stream of clean running water and then slowly air dried. Do not use direct sources of heat or sunlight to accelerate drying; this may cause cracking or soluble salt migration. Consider using plastic screens for drying; this allows maximum air circulation around objects.
- Do not wash object if it is dry. Robust objects can be brushed with a soft bristle brush to remove surface grime and dirt.
- Fragile fragments of ceramics and glass may be best packed in bags and then placed vertically in a container. This will prevent the accumulated weight of items in the upper part of a container from crushing fragile pieces below them. It also helps to prevent inadvertent over packing of boxes by pushing down items to fit more in.
- If object has an applied surface (paint, gilding, etc.) do not rub surface or otherwise try to clean the object. Keep item protected and seek a conservator's help as soon as possible.

- If surfaces are flaking, keep object horizontal and place nothing on top of it.
- If packing multiple items in one container, place heaviest at the bottom, with lighter objects on top. Do not over pack a container; it must be easy to reach and inspect items at the bottom of the box.
- Stone items can be very heavy; avoid over packing containers and piling objects on top of each other.

WOOD

- If mud and debris has been deposited on wet wood it can be gently sponged off with clean, cool water. Avoid wiping the surface with a gritty sponge. Rinse the sponge often. Do not try to remove the deposits with a dry cloth because this action can result in abrading the surface. Wait for a conservator's assistance in the removal of mud and plaster from fragile and unstable finished surfaces such as gold leaf.
- Do not wash or otherwise dampen dry wooden objects. Such action may cause irreparable cracking, warping, and other structural damage to the object.
- Watch for surface treatments such as paint; make sure that these surfaces are protected and do not become abraded during salvage.
- Do not dry out wet wood objects too quickly. Remove all the water on and around the object as soon as possible. Lower the relative humidity level slowly to acceptable levels. It may be necessary to cover affected objects with a polyethylene tent to ensure slow drying. Do not use direct sources of heat (such as heaters, blow dryers, or sunlight) to speed drying.
- Use fans to provide good ventilation and thus decrease the likelihood of mold growth, but do not aim the fans directly at furniture and objects as this may accelerate and cause uneven drying.
- Small wooden items may be frozen if the drying process cannot be started within 48 hours. However, furniture and objects of composite materials should not be frozen, as irreparable damage can occur.
- Seek a conservator's help as soon as possible.

ORGANICS (leather, hide, fur, feathers, bone, horn, basketry, etc.)

- If wet, rinse with clear running water to remove dirt and debris and blot excess moisture with lint free cloths, paper towels, or sponges. Do not rub or scrub surfaces.
- Do not wash or otherwise dampen dry organic objects. Such action may cause irreparable cracking, warping, and other structural damage to the object.
- Items such as baskets, shoes, bags, and hats, should be stuffed with tissue paper to provide internal support if wet or dry, and to help draw out moisture from internal surfaces if the object is wet. Be careful not to over stuff items — only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Do not dry out wet organic objects too quickly. Remove all the water on and around the object as soon as possible. Lower the relative humidity level slowly to acceptable levels. It may be necessary to cover affected objects with a polyethylene tent to ensure slow drying. Do not use direct sources of heat (such as heaters, blow dryers, or sunlight) to speed drying. Consider drying organic materials on non-metallic screening material to enable even drying and good air circulation around objects.
- Use fans to provide good ventilation and thus decrease the likelihood of mold growth, but do not aim the fans directly at objects as this may accelerate and cause uneven drying.
- Small organic items can be placed in boxes vertically to prevent crushing from items above them. Larger items should be packed flat. Or in whatever position seems to provide them with maximum structural stability.

- Do not place other objects inside one another at anytime, for example do not put small organic objects inside baskets.
- Larger items, such as furs, should be moved by introducing a support, such as a plastic-covered board, underneath them and lifting the object by the board, not by directly handling the object itself.
- Organic materials can be frozen if the drying process cannot be started within 48 hours.
- Seek a conservator's help as soon as possible.

TEXTILES

- All textile items should be lifted and packed flat with support below them (such as a plastic-covered board). Never lift a textile by its edge; the weight of the object is likely to cause it to tear. This is especially important if the object is covered with mud and debris, adding even more weight.
- Avoid stacking textiles one on top of another.
- Do not wash or otherwise dampen any textile objects. Such action may cause irreparable damage to the object, including the bleeding of dyes and even disintegration.
- Ingrained dirt can cause abrasion of the fibers making up the textile. For this reason, handling the textile must be kept to a minimum.
- Larger items, such as blankets or quilts, should be moved by introducing a support, such as a plastic-covered board, underneath them and lifting the object by the board, not by directly handling the object itself.
- Do not attempt to clean textiles without the direct help of a conservator. It is better to freeze such objects if a conservator cannot respond within 48 hours.
- Fresh stains and bleeding dyes will be permanently set if they are allowed to dry. Wet cleaning before drying will be necessary and will require assistance/advice from conservators. If more than a couple of artifacts have been water damaged, the textiles should be frozen until adequate time and trained personnel are available.
- Items such as shoes, bags, costumes, and hats, should be stuffed with tissue paper to provide internal support, and to help draw out moisture from internal surfaces. Be careful not to over stuff items; only a small amount of very loosely crumpled tissue will do the job. If the stuffing material cannot be introduced without tearing or otherwise damaging the item, do not try to stuff it.
- Do not unfold wet fabrics as they easily tear. Likewise, do not stack wet textiles on top of each other as the lower layers can be crushed by the weight of the upper ones, drying becomes more difficult and the chance for mold growth and dye transfer between textiles also increases.
- Seek a conservator's help as soon as possible.

PAPER (books, documents, art on paper)

- If wet, handle books, papers, and art on paper very carefully — paper tears very easily when wet. Do not try to open or close wet books. Books from the museum collection should be treated as artifacts; the whole is important, not just the contents. Do not remove covers.
- Books and papers on coated stock (shiny, slick feeling) will fuse together if allowed to dry naturally. They should be frozen and can later be freeze-dried easily. If it is not possible to freeze coated paper items, each page must be interleaved. Pages not interleaved will probably be permanently stuck together. It may be necessary to leave coated books and papers under water until a few hours before they can be frozen or interleaved.
- Mud and debris on the outside of closed wet books can be removed in large part before freezing, using water and sponges with a dabbing motion. Hold books closed during this process. Do not rub mud into the book. Mud and mold will be more easily removed after

drying (remove only large deposits of mud). Exception: fine silt, such as from flooding river water, will be more easily removed before drying.

- Dry books covered with mud and debris should not be cleaned using water. Carefully scrape off excess dirt taking care not to rub or scrub surfaces. Keep books closed during this process. After as much of the mud as possible has been removed, allow the books to dry out slowly and then have them further cleaned by a conservator.
- Do not attempt to clean wet or dry paper documents or works of art on paper. Freeze and seek the help of a conservator.
- All paper items should be lifted and packed flat with support below them (such as a plastic-covered board). Never lift paper by its edge — it is likely to cause it to tear.
- Avoid stacking paper too high; paper is very heavy and damage can be done to items at the bottom of the pile due to the weight and movement of material on top.
- Seek a conservator's help as soon as possible.

PHOTOGRAPHIC MATERIALS

- All photographic items should be lifted and packed flat with support below them (such as a plastic-covered board). Never lift photographs by their edge — it is likely to cause it to tear.
- Do not touch a photographic image. This may cause damage to the image.
- Do not wash or otherwise dampen any photographic materials if they are dry. Such action may cause irreparable damage.
- Wet photographic materials can be gently rinsed clean under clean running water if they appear to be robust enough to survive such treatment. Do not brush or rub any surfaces.
- Seek a conservator's help as soon as possible.

- Due to the huge variety of types of materials associated with photographic collections, the need to contact an experienced conservator is extremely important.

ELECTRONIC MEDIA

- In general, these materials can be rinsed in clean running water. Do not scrub or rub surfaces.
- Do not use magnetic tools near these media.
- Air dry on racks and re-house in clean containers or cases.
- Seek the advice of a conservator.

Table 9 Mud and Debris Deposition Salvage Procedures

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Metals	Dry immediately if necessary. Do not freeze.	If wet, rinse with clean water. Do not wash if dry. Do not use direct heat to speed drying. Watch for fragile surfaces.	Pad well. Allow air circulation to avoid moisture and condensation. Lead objects should not be packed in organic materials (paper, cardboard).
Ceramics, glass, stone	Start drying within 72 hours if necessary. Salvage as soon as possible.	Ceramics and glass are likely to be fragile and brittle; possibly sharp. Watch for applied surfaces flaking. Rinse with clean water. Do not use direct heat to speed drying.	Pad well. Small fragments of ceramics and glass can be packed on edge to prevent crushing. Stone items are heavy; do not over pack containers.
Wood	Freeze or start drying within 48 hours. Do not dry too quickly. Do not freeze furniture without conservator's advice.	Objects are likely to be very fragile. Watch for paint on surfaces. Dry slowly. Watch for warping, cracking, and distortion during drying. Rinse with clean water. Do not use direct heat to speed drying.	Pad well.

Table 9 Mud and Debris Deposition Salvage Procedures (continued)

MATERIAL DAMAGED	**PRIORITY**	HANDLING PRECAUTIONS	PACKING METHODS
Organics (leather, hide, fur, feathers, bone, horn, basketry, etc.)	Freeze or start drying within 48 hours.	Objects are likely to be fragile, weak, and heavy; especially leather and furs. Do not unfold furs or pieces of leather. Dry slowly. Watch for warping, cracking, and distortion during drying. Lift large items with supports. Rinse with clean water. Do not use direct heat to speed drying.	Pad well. Pack large objects (furs, hides, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Textiles	Seek a conservator's help immediately. Freeze within 48 hours if treatment advice is not available.	Objects are likely to be fragile, very weak, and heavy. Do not unfold textiles. Lift large items with supports. Avoid stacking items on top of each other. Do not wash textiles.	Pack large objects (blankets, quilts, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.

Table 9 Mud and Debris Deposition Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Paper	Freeze or dry within 48 hours if damp.	Likely to be fragile, weak, and easily torn. Do not try to separate single sheets of paper. If necessary, rinse books with clean water; keeping them closed. Do not clean works of art on paper or paper sheets. If air drying books, prop open slightly while standing on end, or interleave with absorbent materials.	Pack flat with support underneath. Avoid over packing boxes. Interleave with wax or freezer paper. Pack books with spines down in boxes.
Photographic materials	Seek conservator's advice at once. Do not freeze any materials without first consulting a conservator.	Likely to be fragile, weak, and easily torn. Do not try to separate single photos if stuck together. Rinse with clean water. Do not touch image area.	Pack flat with support underneath. Avoid over packing boxes.
Electronic media	Dry within 48 hours. Do not freeze.	Keep away from magnetic sources. Avoid scratching surfaces. Rinse with clean water.	Pack in clean containers.

DUST

Common Dust Damage

- Abrasion of surfaces
- Introduction of ingrained dirt into surfaces

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location).
- Turn off all HVAC units that introduce outside air into the building. Do not turn HVAC units back on until the threat of dust has passed and particulate filters on the units have been checked and replaced with screens that can filter out fine particulate matter.
- Seal all doors, windows, ducts, valves, and vents that allow outside air to enter the building.
- Cover collections with plastic sheeting to prevent dust from falling onto objects.

Salvage Procedures

Always wear a dust mask while working on dust-contaminated objects of any kind. When possible, always seek the advice of a conservator when dealing with dust salvage.

Never wash materials to remove dust. Materials can be gently brushed to remove dust using a soft brush or puff-brush (of the type commonly used to clean cameras). Work with a vacuum extraction unit to collect the dust if at all possible. This will help reduce the chance that the dust is simply redistributed, rather than removed.

Avoid the use of canned air to remove dust, as these cans produce very forceful streams of air that damage delicate surfaces. In addition, if these cans are tilted or shaken, propellant can be expelled onto the object surface. Table 10 summarizes dust salvage procedures.

METALS

- Watch for applied surfaces that might be fragile (such as paint, gilding, and so forth). If these are lifting or flaking, do not continue brushing. Re-bag for treatment by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.
- Many of the metals at FOVA have been coated with a protective wax. Such coatings have a tendency to attract and retain dust as the surfaces have a slightly tacky quality — although not to the touch. If metal objects do not seem to be coming clean when gently brushed, it is likely that the coating has captured the dust. These objects will have to be further treated by a conservator.

CERAMICS, GLASS, AND STONE

- Watch for applied surfaces that might be fragile (such as paint). If the surface is lifting or flaking, do not continue brushing. Re-bag for treatment by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

WOOD

- Watch for applied surfaces that might be fragile (such as paint). If the surface is lifting or flaking, do not continue brushing. Re-bag for treatment by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

ORGANICS (leather, hide, fur, feathers, bone, horn, basketry, etc.)

- Watch for fragile surfaces or the loss of fibers and hair. If this occurs stop cleaning and re-bag for treatment by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

TEXTILES

- A household vacuum cleaner must not be used to directly clean textiles without appropriate modification to reduce the suction force, which is far too great for safe use on museum artifacts. A conservator can help with this task.
- Watch for fragile surfaces or the loss of fibers. If this occurs stop cleaning and re-bag for treatment by a conservator.
- If dust is being driven into the textile by brushing, stop work and re-bag for treatment by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

PAPER (books, documents, art on paper)

- A household vacuum cleaner must not be used to directly clean paper without appropriate modification to reduce the suction force, which is far too great for safe use on museum artifacts. A conservator can help with this task.
- If there is any indication that cleaning is damaging the surface of objects, (scratching, lifting fibers, etc.) stop the process, re-bag items, and have the material cleaned by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

PHOTOGRAPHIC MATERIALS

- A household vacuum cleaner must not be used to directly clean photographic materials without appropriate modification to reduce the suction force, which is far too great for safe use on museum artifacts. A conservator can help with this task.
- If there is any indication that cleaning is damaging the surface of objects, (scratching, lifting fibers, etc.) stop the process, re-bag items, and have the material cleaned by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

ELECTRONIC MEDIA

- A household vacuum cleaner must not be used to directly clean electronic media without appropriate modification to reduce the suction force, which is far too great for safe use on museum artifacts. A conservator can help with this task.
- If there is any indication that cleaning is damaging the surface, especially causing scratching, stop the process, re-bag items, and have the material cleaned by a conservator.
- Repackage clean objects to protect them from any residual dust in the environment.

Table 10 Dust Salvage Procedures

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Metals	Salvage as soon as possible.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pad well. Allow air circulation to avoid moisture and condensation. Lead objects should not be packed in organic materials (paper, cardboard).
Ceramics, glass, stone	Salvage as soon as possible.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pad well. Small fragments of ceramics and glass can be packed on edge to prevent crushing. Stone items are heavy; do not over pack containers.
Wood	Salvage as soon as possible.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pad well.

Table 10 Dust Salvage Procedures (continued)

MATERIAL DAMAGED	PRIORITY	HANDLING PRECAUTIONS	PACKING METHODS
Organics (leather, hide, fur, feathers, bone, horn, basketry, etc.)		Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pad well. Pack large objects (furs, hides, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Textiles	Salvage as soon as possible. Seek the advice of a conservator as soon as possible.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pack large objects (blankets, quilts, etc.) flat. Stuff three-dimensional objects (shoes, hats, bags, etc.) loosely with tissue for support.
Paper	Salvage as soon as possible.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols.	Pack flat with support underneath. Avoid over packing boxes. Interleave with wax or freezer paper. Pack books with spines down in boxes.

Table 10 Dust Salvage Procedures (continued)

MATERIAL DAMAGED	**PRIORITY**	HANDLING PRECAUTIONS	PACKING METHODS
Photographic materials	Seek conservator's advice at once.	Watch for fragile surfaces. Wear a dust mask. Gently brush with soft brush or puff-brush, using a vacuum to collect dust. Do not wash to clean. Do not use "canned air" aerosols. Do not touch image area.	Pack flat with support underneath. Avoid over packing boxes.
Electronic media	Salvage as soon as possible.	Keep away from magnetic sources. Avoid scratching surfaces. For cleaning seek the advice of a conservator.	Pack in clean containers.

VAPOR/GAS AND HAZARDOUS MATERIALS EXPOSURE

Common Vapor/Gas and Hazardous Materials Exposure Damage

- Adhesion of art, book, paper, and photographic items
- Contamination of objects so that they can't be routinely handled and must be treated or reformatted
- Corrosion and rusting of metals
- Erosion of masonry and stone
- Finish loss on most materials, particularly photographs, textiles, and wood
- Loss of museum records and documentation
- Loss of objects due to explosion
- Rotting of organic materials
- Pigment and dye loss of most painted and dyed surfaces and materials
- Staining and deposition of contaminants on objects, particularly bone, ivory, paper, shell, and textiles
- Structural integrity loss for plaster and terra cotta
- Swelling and pressure damage of wood and paper
- Fires and explosions

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location).
- Turn off all HVAC units that introduce outside air into the building. Do not turn HVAC units back on until the threat has passed and particulate filters on the units have been checked and replaced with screens that can filter out fine particulate matter.
- Seal all doors, windows, ducts, valves, and vents that allow outside air to enter the building.
- Cover collections with plastic sheeting to prevent dust from falling onto objects.

Salvage Procedures

It is difficult to provide salvage instructions for this type of disaster as the most appropriate methods will depend on the exact nature of the hazardous material and/or vapor/gas (this might include toxic waste spills, radioactive contamination, biological waste, gasoline, and other chemical spills). By their nature as hazardous materials, the substances in question pose so significant a threat to health and safety that it is likely that special precautions, well beyond what can be given here, will be required for the safe handling of impacted collections.

In the event of major incident (that requires total evacuation of the area) nothing should be done to salvage any collections objects before the appropriate hazardous materials specialists can give advice on the nature of the threat. At that time, the advice of a conservator in cooperation with a hazardous materials expert should be sought and actions taken under their direct supervision.

VANDALISM, CIVIL DISOBEDIENCE, AND TERRORISM

Common Vandalism, Civil Disobedience, and Terrorism Damage

- Explosion damage resulting from bombs
- Fire and smoke damage
- Fouling of collections with food, garbage, and human waste
- Graffiti marking on objects
- Deliberate destruction of objects
- Deliberate attack with chemicals (such as acids)

Evacuation/Damage Mitigation Procedures

- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location).
- Cover collections with plastic sheeting to prevent dust from falling onto objects.

Salvage Procedures

As with hazardous materials incidents, it is difficult to provide salvage guidelines other than those already given for such impacts as fire, flood, breakage, and so forth. This is because the nature of the threats and impacts on collections is so varied and unpredictable.

VOLCANIC ACTIVITY

Common Volcanic Activity Damage

- Corrode and oxidize metals and photographs due to exposure to volcanic gases
- Damage surface finishes on paper, photographs, wood, textiles, and other objects
- Destroy magnetic media, particularly audiotapes, digital files, software, and video tapes
- Embrittle paper, photographs, textiles, and other objects
- Fade and/or stain art work on paper
- Cause fire, flood, landslides, and other related disasters
- Inundation with volcanic ash, which is both corrosive and abrasive

Evacuation/Damage Mitigation Procedures

- Due to the likelihood of some prior warning of an eruption, much can be done to protect collections before any damage occurs.
- Remove high priority items and records first (Part 3) to a designated safe location.
- Document removal of items (personnel who removed them, date, and location).
- Turn off all HVAC units that introduce outside air into the building. Do not turn HVAC units back on until the threat of dust has passed and particulate filters on the units have been checked and replaced with screens that can filter out particulate ash.
- Seal all doors, windows, ducts, valves, and vents that allow outside air to enter the building.
- Cover collections with plastic sheeting to prevent dust from falling onto objects.

Salvage Procedures

The impact of a volcanic eruption on a collection is major. Due to the likelihood of some advanced warning of an eruption, it is vital that FOVA organize for the protection and evacuation of the collections. This should include the active involvement of a conservator to help in this process.

In the event that objects are damaged by fire, flood, dust, breakage, etc., the procedures described in previous sections for salvaging materials under these conditions should be followed.

Part 5 Salvage Procedures for Highly Sensitive Items by Specific Location

FOVA staff should consult these procedures in the event of an emergency. On the following pages, Tables 11 through 14 outline FOVA salvage procedures by specific FOVA location. Damage done at Collections Storage, the Indian Trade Shop, the Visitors Center, and the Chief Factors House locations are included.

COLLECTIONS STORAGE

Figures 3 to 5 provide maps of the storage areas. Table 11 lists the special salvage needs for certain objects stored in this area.

Table 11 Collections Storage Building Procedures

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
West Storage Room, Cabinet A	McLoughlin daguerreotype	If wet, air dry as soon as possible. Do not touch image area. Do not freeze.
	McLoughlin letter book	Salvage using various procedures described for paper.
	Pencil sketches	Air dry flat.
East Storage Room, Cabinet C	Human remains (from various locations at FOVA, WHMI, FOCL, LARO)	Due to politically sensitive nature of this material, its recovery should be swift and low key. Items should be secured in a lockable facility with strictly controlled access, and not left in an area with more general access by recovery staff. If wet, air dry slowly. Do not attempt to clean this material.

Figure 3 Collections Storage First Floor

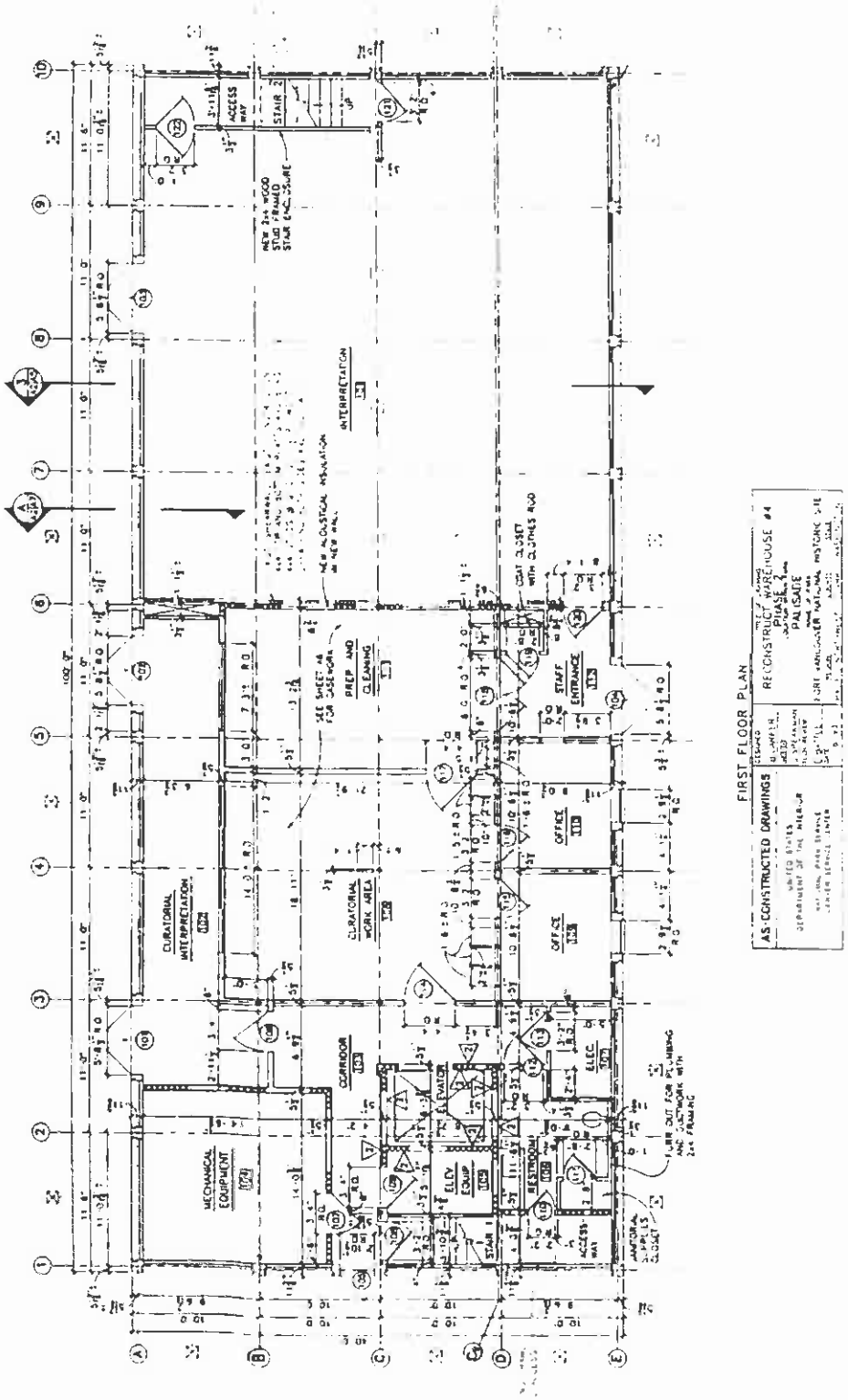


Figure 4 Archives Room

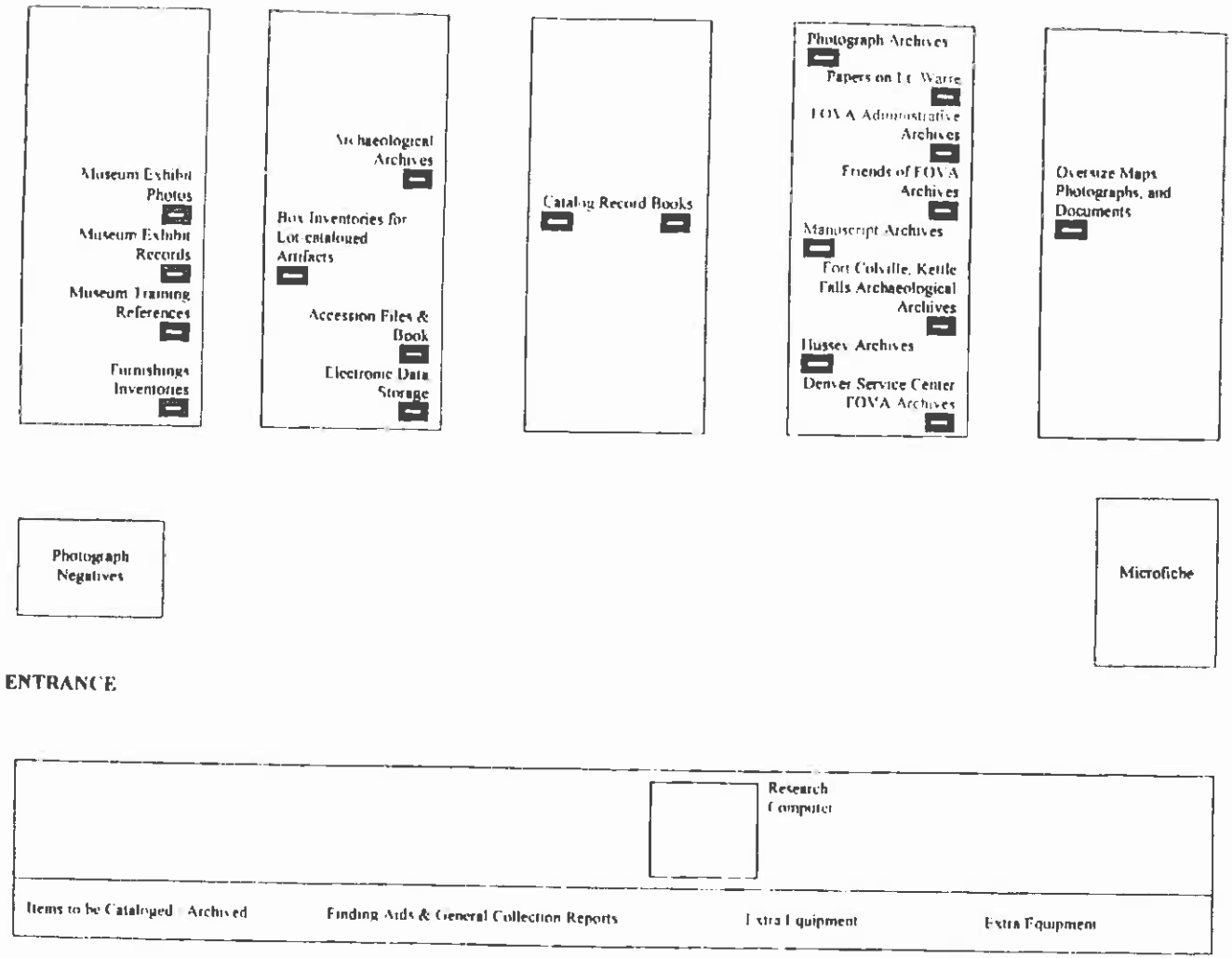
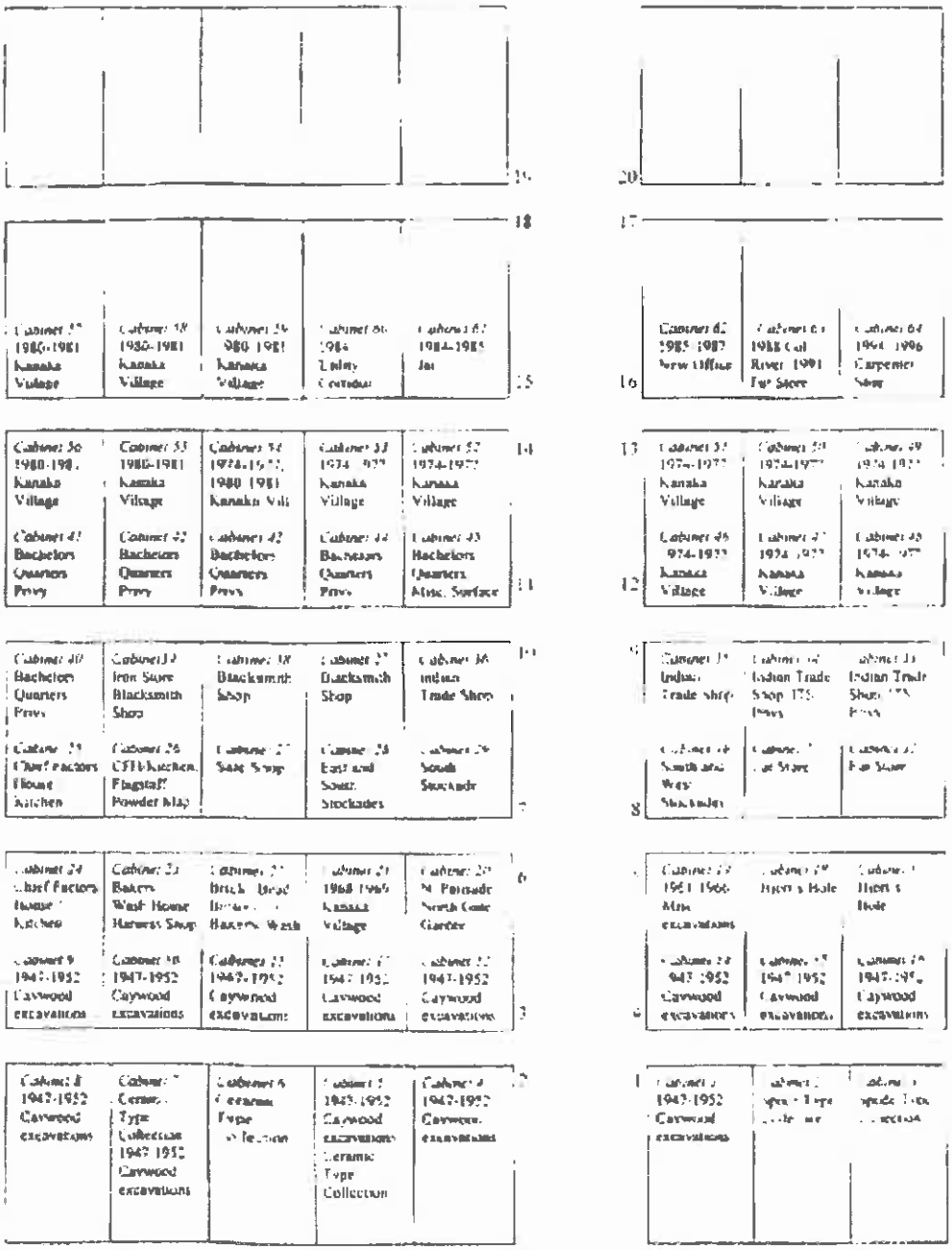


Figure 5 West Collections Storage Room



West Collection Storage Room

INDIAN TRADE SHOP

Figure 6 provides a map of the Indian Trade Shop area. Table 12 lists the special salvage needs for certain objects stored in this area.

Table 12 Indian Trade Shop Procedures

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
Barclay Sitting Room	Native American baskets	If wet or fire damaged, these items may be very weak. Handle with lots of support. Do not place anything inside these objects other than tissue paper to help support them. Do not attempt to clean or repair.
	Framed print	Air dry very slowly. Do not take out of frame unless absolutely necessary. Lay flat.
	3 cane-seat chairs	If wet, dry very slowly to avoid distortion of frames.
	Blue Chelsea tea service (5 pieces)	If broken, try to photograph *in situ* before removal. Keep all pieces together and label well. Do not try to reconstruct or otherwise mend.
Barclay bedroom	Barclay Bible	Salvage using various procedures described for paper.
	China trunk	After damage, this object may be structurally weakened. If wet, dry slowly to reduce chances of distortion.
	Native American baskets	If wet or fire damaged, these items may be very weak. Handle with lots of support. Do not place anything inside these objects other than tissue paper to help support them. Do not attempt to clean or repair.

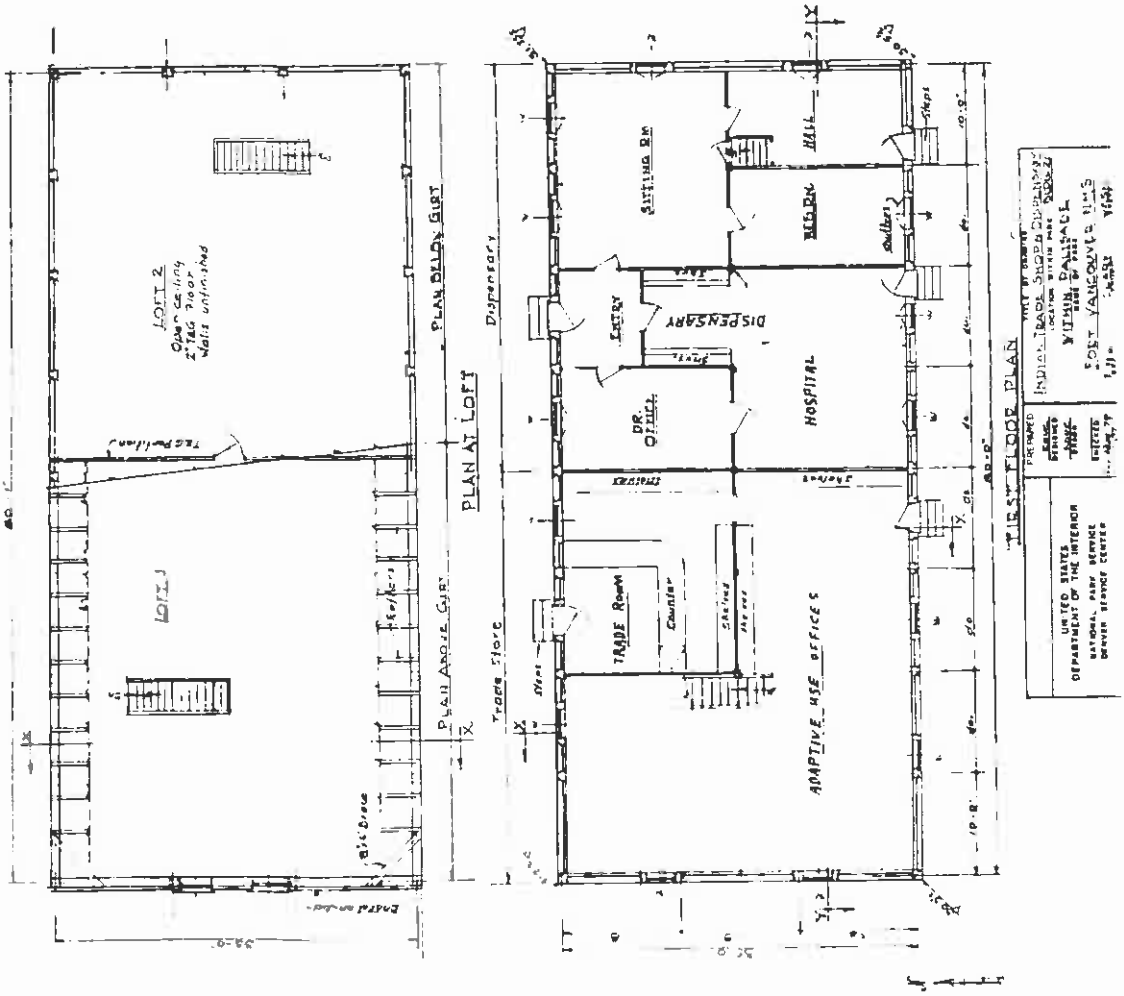
Table 12 Indian Trade Shop Procedures (continued)

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
Dr. Barclay's office	Medical book on desk	Salvage using various procedures for paper.
	Medical diploma (on loan)	Air dry very slowly. Do not take out of frame unless absolutely necessary. Lay flat.
	Mortar and pestle (on loan)	Salvage using various procedures for ceramics. Keep the two parts together.
	Medical kit	Air dry slowly. Do not freeze. Remove items from kit, but keep group of objects together at all times. Do not separate.
	All medical books (on shelves)	Salvage using various procedures for paper.
	All medicine bottles	These are very fragile and should be handled accordingly. Follow various salvage procedures for glass.
Dispensary	Bottles (various)	These are very fragile and should be handled accordingly. Follow various salvage procedures for glass.

Table 12 Indian Trade Shop Procedures (continued)

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
Hospital	Bottles (various)	These are very fragile and should be handled accordingly. Follow various salvage procedures given for glass.
Trade room	Native American baskets Ceramics (various)	If wet or fire damaged, these items may be very weak. Handle with lots of support. Do not place anything inside these objects, other than tissue paper to help support them. Do not attempt to clean or repair. Follow various salvage procedures for ceramics.
NPS office/library	Rare library books (approximately 30)	Salvage using various procedures for paper.

Figure 6 Indian Trade Shop



VISITORS CENTER

Figure 7 provides a map of the Visitors Center area. Table 14 lists the special salvage needs for certain objects stored in this area.

Table 14 Visitors Center Procedures

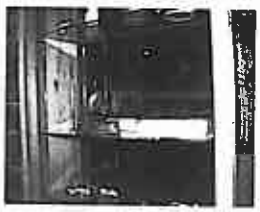
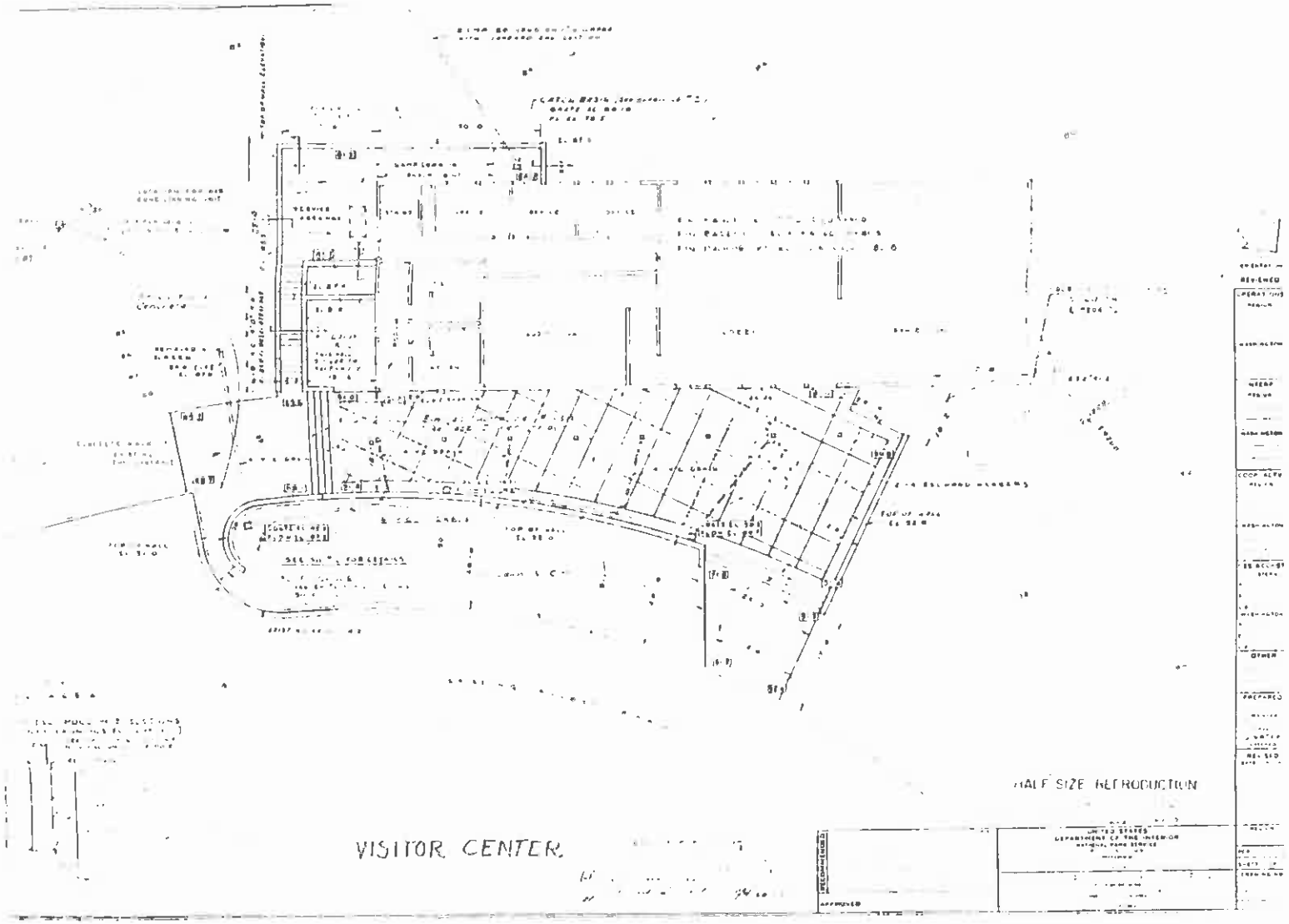
LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
Exhibit area, Case 11A	George Roberts prayer book	Salvage using various procedures for paper.
Case 11A 	McLoughlin Bible	Salvage using various procedures for paper.
Case 9B	Ship model	Object is extremely fragile. Should be handled with every care. Cover with a ridged container (not a sheet of plastic or other flexible material) to avoid breaking the model.

Figure 7 Visitors Center



CHIEF FACTORS HOUSE

Figure 8 provides a map of the Chief Factors House area. Table 15 lists the special salvage needs for certain objects stored in this area.

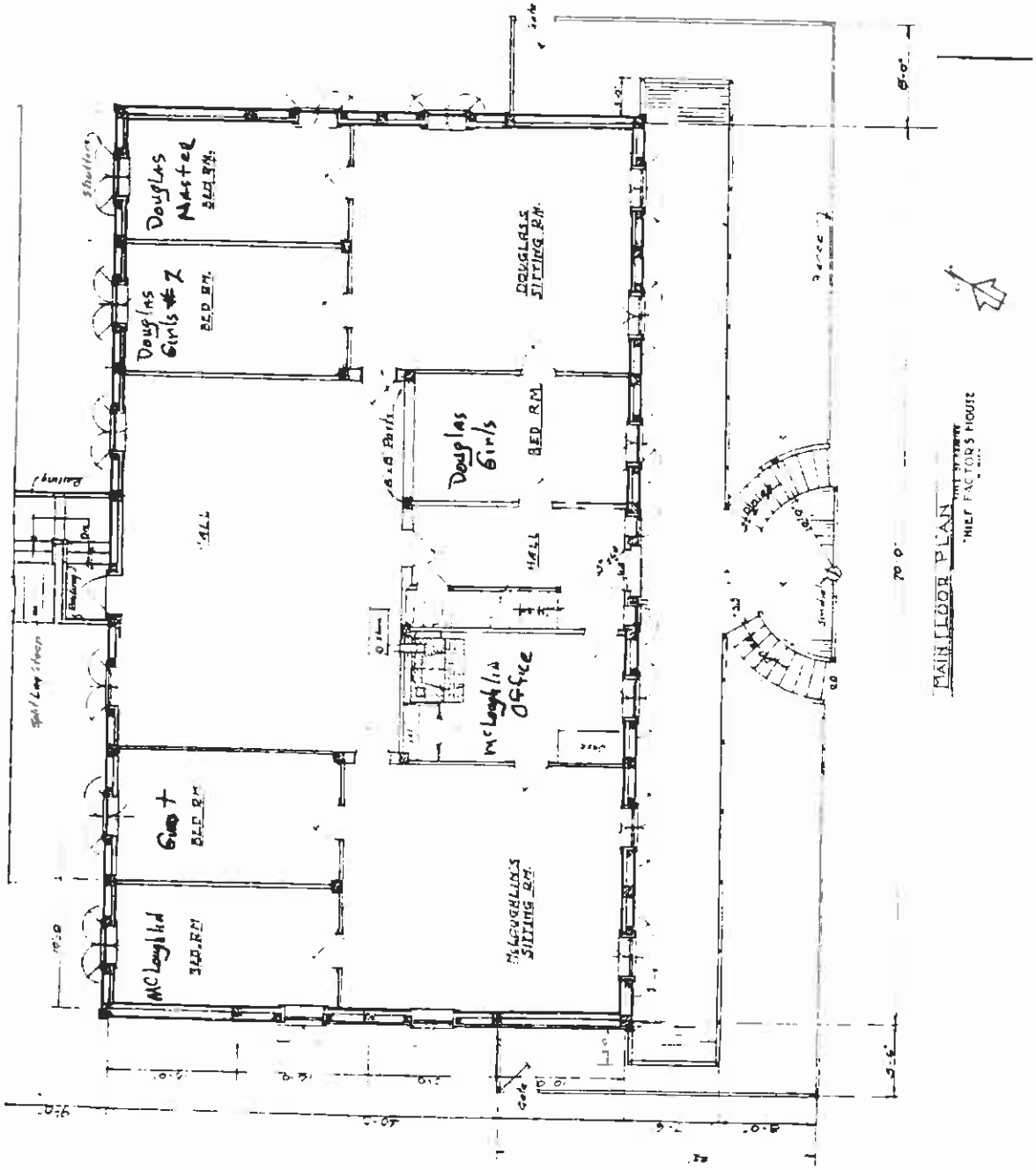
Table 15 Chief Factors House Procedures

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
McLoughlin office	Globe	Handle with extreme care; object is fragile. Seek a conservator's advice immediately. If drying is necessary, do so very slowly to avoid distortion.
McLoughlin dining room	Lamp	Be careful when handling; shade does not separate from base.

Table 15 Chief Factors House Procedures (continued)

LOCATION	OBJECT DESCRIPTION	SPECIAL NEEDS
McLoughlin master bedroom 	China trunk Dressing case	After damage, object may be structurally weakened. If wet, dry slowly to reduce chances of distortion. After damage, object may be structurally weakened. If wet, dry slowly to reduce chances of distortion.
All rooms 	Engravings	Watch for broken glass in frames. Air dry very slowly. Do not take out of frames unless absolutely necessary. Lay flat. Do not touch images. Seek conservator's help immediately.

Figure 8 Chief Factors House



Part 6 ▫ Emergency Contacts

ON-SITE EMERGENCY CONTACTS

This section includes contact information for the FOVA Curator and backup contacts to be called in the event that the Curator is not available.

Theresa Langford, Curator
Work (360) 816-6252
Home 360-906-8943
Cell 360-921-7676

Doug Wilson, Archaeologist
Work (360) 816-6251
Cell 360-921-5241

Robert Cromwell, Archaeologist
Work (360) 816-6253
Cell 360-903-8009

REGIONAL EMERGENCY CONTACTS

This section includes information on requesting off-site emergency assistance, including a list of local and national resources that can provide advice and assistance during museum collections salvage operations. This section needs to be updated on a regular basis to assure that the information remains current and correct.

Be sure to provide the following information when requesting on-site disaster recovery assistance:

- Your name, title, institution, and telephone number.
- A description of the disaster and the time it is believed to have occurred.
- The extent and type of damage involved, including the types of materials affected.
- Whether or not the designated recovery team has been activated.
- Whether or not the type of salvage operation planned is underway.
- The salvage and recovery supplies on hand and those that will be needed.
- Whether or not funding is available for the purchase of additional supplies and the name and telephone number of the individual authorized to approve such purchases.
- Whether or not the utilities are functioning.
- Directions for reaching the site and a description of the individual to contact upon arrival.

Mutual Aid

There are two mutual-aid systems currently in development. The first is the Emergency Preparedness section of the CRESA. Once fully operational, this organization will serve to coordinate communications and resources among the organizations supplying/needing services following an emergency incident.

It is the responsibility of the park Technical Specialist to initiate contact with this organization, familiarize the membership of the organization with the special requirements of the park and skills of the park staff, and draft the necessary agreements for mutual aid.

The primary contact at this organization is:

John Wheeler, Emergency Preparedness Specialist
Clark Regional Emergency Services Agency
710 W. 13th Street
Vancouver, WA 98660-2810
360-737-1911 ext. 3941
john.wheeler@clark.wa.gov

The second mutual-aid system specific to the recovery of damaged archives and museum collections within the Pacific West Region is a list of archivists and curators working for the NPS and the National Archives and Records Administration. These people are available for emergency response to both federal and non-federal archives and museums within the region.

It is the responsibility of the park Technical Specialist to initiate contact with the individuals on this list, to organize and provide training/familiarization with the park resources, and to assure this listing remains current. Contacts include the following people:

Kent Bush, Regional Curator
Pacific West Region, NPS
909 First Avenue
Seattle, WA 98104
206-220-4145
Fax 206-220-4159
kent_bush@nps.gov

Bob Chenowith, Park Curator
Nez Perce National Historical Park
Big Hole National Battlefield
39063 US HWY 95
Spalding ID 83540
208-843-2261 ext. 40
bob_chenowith@nps.gov

Brook Childrey, Park Curator
Mount Rainier National Park
Tahoma Woods, Star Route
Ashford, WA 98304
360-569-2211, ext. 2364
brooke_childrey@nps.gov

Candace Lein-Hayes, Assistant Regional Administrator
Pacific Alaska Region
National Archives and Records Administration
6125 Sand Point Way NE
Seattle, WA 98115-7999
206-336-5142
candace.leinhayes@nara.gov

Mary Benterou, Curator of Record for Lava Beds and Oregon Caves NMs
Museum & Archives Collections
Crater Lake National Park
P. O. Box 7
Crater Lake, OR, 97604
541-594-3095
Fax 541-594-3010
mary_benterou@nps.gov

Robert Applegate, CA
Archivist
Nez Perce National Historical Park
Big Hole National Battlefield
39063 US HWY 95
Spalding ID 83540
208-843-2261 ext. 142
Fax 208-843-2124
robert_applegate@nps.gov

Kelly Cahill, Curator of Record for San Juan Island National Historical Park
North Cascades National Park Service Complex
Ebey's Landing National Historical Reserve
7280 Ranger Station Road
Marblemount, WA 98267
360-873-4590 ext. 19
kelly_cahill@nps.gov

LOCAL AGENCY CONTACTS

Below are local experts that may be contacted in the event of an emergency. Table 6 provides a list of local emergency service providers by item or service needed.

Fire Training, Inspection, and Prevention

Steve Streissguth, Deputy Chief
City of Vancouver
Vancouver Fire Department
7110 NE 63rd Street
Vancouver, WA 98661
360-735-8787
Fax 360-892-4801
steve.streissguth@ci.vancouver.wa.us

HAZMAT, Building Inspection Training

Dan Monaghan, Special Ops & Security
City of Vancouver
Vancouver Fire Department
7110 NE 63rd Street
Vancouver, WA 98661
360-619-4165
dan.monaghan@ci.vancouver.wa.us

Emergency Coordination and Preparedness, EMS

John Wheeler, Emergency Preparedness Specialist
Clark Regional Emergency Services Agency
710 W. 13th Street
Vancouver, WA 98660-2810
360-737-1911 ext. 3941
john.wheeler@clark.wa.gov

Building Inspection and Clearance

Cindy Peterson, Chief Building Inspector
City of Vancouver
Development and Review Department
1313 Main Street
Vancouver, WA 98606
360-735-8873 ext. 8333

Table 16 Emergency Service Providers by Item or Service Needed

ITEM OR SERVICE	VENDOR CONTACT INFORMATION
Computer media recovery	**DataSafe** 574 Eccles Ave. South San Francisco, CA 94080 650-875-3800 info@datasafe.com **Rapid Technologies** 10130 SW Nimbus Ave. #D6 Portland , OR 97223 530-968-3125 Fax 503-968-3220
Drying, dehumidification, vacuum freeze-drying	**Blackmon-Mooring-Steamatic Catastrophe, Inc.** (aka BMS Catastrophe) 303 Arthur Street Fort Worth, TX 76107 800-433-2940 (24-hour hot line) 817-332-2270 Fax 817-332-6728 **Disaster Recovery Services, Inc.** 2424 Blue Smoke Court West Fort Worth, TX 76105 800-856-3333 (24-hour hot line) 817-535-6793 Fax 817-536-1167
Equipment/generators	**The Halton Company** 4421 NE Columbia Blvd. Portland, OR 97218 800-452-7676 503-288-6411 **Honda of St. Johns** 7741 N Lombard Street Portland, OR 97203 503-286-8816

Table 16 Emergency Service Providers by Item or Service Needed (continued)

ITEM OR SERVICE	VENDOR CONTACT INFORMATION
Freezing, cold storage	**Munters Moisture Control** 201 Calle Pintoresco San Clemente, CA 92672 800-MUNTERS Fax 949-492-5996 mcshq@munters.com **Dreisbach Enterprises** 2530 E 11th St. Oakland, CA 94601 510-533-6600 **United Cold Storage** 233 East Grand Avenue South San Francisco, CA 650-589-5645 Contact Jim Morgan: jim@unitedcoldstorage.com
Paper conservation	**Alice Bear** P.O. Box 24262 Seattle, WA 98124 206-323-5219 abear@esup.com **Nancy Harris** UC Berkeley Libraries, Department of Conservation Berkeley, CA 94720

Table 16 Emergency Service Providers by Item or Service Needed (continued)

ITEM OR SERVICE	VENDOR CONTACT INFORMATION
Photograph conservation	**Kodak Information Center** 4545 East River Road Rochester, NY 14650-0811 800-242-2424 ext. 10 www.kodak.com/global/en/service/contactKodak/kodakPhone Numbers.jhtml **Library of Congress** Preservation Directorate LM-G07 Washington, DC 20540 202-707-5213
Truck rentals	**Budget Car and Truck Rental** 2033 SW 4th Street Portland, OR 530-249-6500 800-527-0700 **Hertz Truck Rental** 7505 NE Airport Way Portland, OR 97218 800-654-3131 503-331-4200

Part 7 ▫ Emergency Forms

The following pages contain forms which may be used in the event of an emergency.

	Page no.
To Do Checklist	82
Museum Collections Damage Report Form	83
FOVA Disaster Photograph and Video Log	84
Suggested Emergency Equipment and Supplies Checklist	85
FOVA Records Disaster Packout Inventory Sheet	87
FOVA Objects Disaster Packout Inventory Sheet	88
Supplemental Single Box Inventory Sheet	89
Supplemental Single Box Inventory - More Than One Record Series	90
Supplemental Single Box Inventory – Objects	91
Supplemental Single Box Inventory – Records	92
Supplemental Single Box Inventory - Multiple Series Page	93
Windshield Survey Form	94

TO DO CHECKLIST

PLANS SECTION TECHNICAL SPECIALIST MUSEUM COLLECTIONS

Assist the Incident Commander and Operations Chief in the development of an inventory of critical cultural and natural resources in the affected area, assessment of impacts to cultural and natural resources by the disaster, coordination of consultation with reviewing agencies under NEPA and NHPA, and development of a park rehabilitation plan for park cultural and natural resources.

Immediate Actions:

— Report to the Incident Commander at the FOVA EOC and assume the role of Plans Section Technical Specialist (Museum Collections).

— Obtain a briefing from Incident Commander and Operations Section Chief.

— Assess impacts to cultural resources from the event.

— Obtain damage reports from FOVA site personnel.

— Activate and assemble the Museum Damage Response Team and assign the team to FOVA sites.

— Coordinate consultation on affected cultural resources under NEPA and NHPA.

— Participate in planning meetings and review Incident Action Plans (IAPs) and identify potential impacts to cultural resources from proposed emergency repairs.

— Provide direction to the Incident Commander and Operations Chief to prevent adverse impacts to cultural resources.

Extended Actions:

— Inform park cultural resource personnel of actions taken under IAPs.

— Supervise preparation and publication of a park rehabilitation plan.

— Coordinate the submittal of resource impacts documentation to the reviewing agencies under NEPA and NHPA.

MUSEUM COLLECTIONS DAMAGE REPORT FORM

SITE ADDRESS OR LOCATION: _____

WATER DAMAGE ❑ MUD/SILT DAMAGE ❑ FIRE/SMOKE DAMAGE ❑ OTHER: _____

Briefly describe collection damage:

Location (Floor/area)	Catalog #	Accession #	Damaged Article	Type and extent of damage

Describe actions taken to salvage and control damage:

Completed by: _____
Date: _____

Copy Sent To:
_____ **Date:**
_____

FOVA DISASTER PHOTOGRAPH AND VIDEO LOG

PHOTOGRAPHER _____ DATE _____

LOCATION _____ FILM/CASSETTE TYPE _____

Roll No.	Frame No.	Description (building, code and number, location, damage, etc)

Completed by: _____
Date: _____

Copy Sent To:
_____ **Date:**
_____

SUGGESTED EMERGENCY EQUIPMENT AND SUPPLIES CHECKLIST

ITEM	QUANTITY
1. Flashlights	4
2. Hand trucks	2
3. Hard hats	4
4. Sump pump or portable pump	1
5. Transistor radio	1
6. Scissors	4
7. Wet-dry vacuum	1
8. Clipboard with list of emergency supplies	1
9. Emergency Operations Plan, Museum Module	4
10. Universal gas shut-off wrench	1
11. Utility knives	2
FIRST AID SUPPLIES	**QUANTITY**
1. Respirators	4
2. Large cardboard splints	4
3. Medium cardboard splints	4
4. Small cardboard splints	4
5. Gauze rolls	4
6. Butterfly closures	1 box
7. First aid cream, small	1 tube
8. 8"x 10" surgical dressing	20
9. Conforming gauze	2.5 packages
10. Gauze sponges	100
11. Bandage scissors	1 pair
12. Hydrogen peroxide	1 bottle
13. Feminine napkins	1 box
14. First aid manual	1
15. Alcohol wipes	1 box
16. Adhesive bandages	Asst. box
OFFICE/CLEANING SUPPLIES	**QUANTITY**
1. Work gloves	4 pair
2. Plastic gloves	4 pair
3. Small white towels	30
4. Rolls of paper towels (2,050 sq. ft.)	100
5. Sponges	4
6. Compressed sponges	8
7. Dustpans	4
8. Steno pads	4

SUGGESTED EMERGENCY EQUIPMENT AND SUPPLIES CHECKLIST (continued)

OFFICE/CLEANING SUPPLIES (continued)	**QUANTITY**
9. 8" x 11" note pads	4
10. 10' measuring tape	4
11. Bag of rubber bands	4
12. Bag of paper tags with aluminum edging	4
13. Utility knives and 2 extra packages of blades	2
14. Roll plastic sheeting, 16' x 100'	1
15. Roll plastic sheeting, 10' x 100'	1
16. Roll plastic sheeting, 8' x 100'	1
17. Roll plastic sheeting, 8' x 100'	1
18. Roll plastic sheeting, 12' x 100'	1
19. Roll freezer paper	4
20. Plastic bags, 33 gallon	500
21. Electric oscillating fans, 16"	4
22. 25' extension cords	4
23. Roll duct tape	4
24. Black, permanent, felt-tip markers	12
25. Radio, am/fm	1
26. AA-size batteries	10
27. Sure-grip cotton gloves	100
28. Roll polyester film, archival quality, 36" x 25'	1
29. Roll of Reemay/polyester fabric, 36" x 100yards	1
30. White plastic corrugated boxes, 16" x 12" x 10" ("Rescue" emergency boxes stored flat in 2 boxes)	40
31. Broom	4
32. Wet mop handle	4
33. Wet mop head	4
34. Dry mop head	4
35. Shovel	2
36. Ax	2
37. Tool bags, large	4

FOVA Records Disaster Packout Inventory Sheet

Record Series Title:

Include the name in records control schedule or title records are commonly referred to in the office.

Original Shelf Location(s)	Pallet No.	Shipped Via (Co. Name)	Driver's Signature

Box No.	Box Contents (include general description, condition, number of folders, etc. If necessary, complete supplementary detailed for each box)

FOVA Objects Disaster Packout Inventory Sheet			
Building Code and Number: (i.e. PE0002, include description if time allows)			**Room Number:**
Original Storage Location(s):	**Pallet No.**	**Shipped Via:** (Company Name)	**Driver's Signature:** **Date:**
Name & Signature of Staff Recording The Inventory:			**Date:**

Box No.	Box Contents (Include general description, condition, number of items, etc. If necessary, complete Supplemental Single Box Inventory.)

Supplemental Single Box Inventory Sheet

Instructions: List as much information about the content and condition as appropriate and time allows. **In the folder description section, provide numbers in the first column to indicate the order files appear, whether or not the files are numbered.**

Box Number	Series Title

Condition of Records:

Folder No.	Folder Title (and condition, if appropriate)

Supplemental Single Box Inventory - More Than One Record Series

Box Number	

SERIES TITLE(S) (IF MORE THAN ONE, DESIGNATE AS "A", "B", "C", ETC.):

NUMBER OF FOLDERS	COMPRISING: ____ WHOLE BOX ____3/4 BOX ____1/2 BOX ____ LESS ____ OTHER

CONDITION OF RECORDS	WET	DAMP	SOAKED	BURNED SOOT	DIRT	MOLD	MILE	SEVERE
SERIES A								
SERIES B								
SERIES C								

REMARKS ON CONDITION:

SERIES	FOLDER TITLE AND/OR REMARKS REGARDING INDIVIDUAL FOLDER OR DOCUMENT

Supplemental Single Box Inventory - Objects

Box Number	

SERIES TITLE(S) (IF MORE THAN ONE, DESIGNATE AS "A", "B", "C", ETC.):

NUMBER OF OBJECTS	COMPRISING: ____WHOLE BOX ____3/4 BOX ____1/2 BOX ____LESS ____OTHER

CONDITION OF OBJECTS	WET	DAMP	BROKEN	SOAKED	BURNED SOOT	DIRT	MOLD	MILD	SEVERE	OTHER
SERIES A										
SERIES B										
SERIES C										

REMARKS ON CONDITION:

SERIES	OBJECT DESCRIPTION, TITLE AND/OR REMARKS REGARDING INDIVIDUAL OBJECT

Supplemental Single Box Inventory - Records

Instructions: List **as** much information about the **content** and condition **as** appropriate and time allows. In **the folder description section**, provide numbers in the first column to indicate the order files appear, whether or not the files are numbered.

Box Number	Series Title

Condition of Records:

Folder No.	Folder Title (and condition, if appropriate)

CONTINUATION SHEET - SUPPLEMENTAL SINGLE BOX INVENTORY - MULTIPLE SERIES PAGE ____

SERIES	FOLDER TITLE AND/OR REMARKS REGARDING INDIVIDUAL FOLDER OR DOCUMENT

National Park Service
Fort Vancouver National Historic Site

WINDSHIELD SURVEY FORM

1. DISTRICT _____ STATION _____

SURVEY NUMBER _____

2. ADDRESS or LOCATION:

_____

_____

_____

3. STRUCTURE: OK DAMAGED COLLAPSED

ELECTRICITY:OK DAMAGED OUT OF SERVICE

NATURAL GAS: OK LEAKING OUT OF SERVICE

WATER: OK LEAKINGOUT OF SERVICE

4. ON-SITE INJURIES/DEATHS:

5. SPECIAL HAZARDS

6. COMMENTS:

6. Completed by: _____ Date: _____	7. Entered by: _____ Date: _____

Part 8 ▫ Bibliography

The planning for disaster recovery in museum operations is a "specialty within a specialty." While many of the types of resources and methodologies developed for general disaster recovery and emergency operations will fit the specialized needs of archives, libraries, and museum exhibits/collections, some will cause lasting harm or even destruction to these special resources.

As a result, it is necessary for those individuals tasked with planning for disaster recovery to become familiar with the available specialized literature and reference resources. This bibliography contains the available internet addresses in addition to the more traditional book and periodical references available.

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Disaster Resource Guide
http://www.disaster-resource.com/

Federal Emergency Management Agency
http://www.fema.gov

National Earthquake Information Center
http://earthquake.usgs.gov/regional/neic/

National Fire Protection Association
http://www.nfpa.org
800-344-3555.

National Institute for Occupational Health and Safety Flood Cleanup Hazards
http://www.cdc.gov/niosh/flood.html

National Oceanic and Atmospheric Administration Storm and Flood Warnings
http://iwin.nws.noaa.gov/iwin/nationalwarnings.html