



**2016**

**TEXAS HERITAGE MUSEUM**

**SAFETY AND RECOVERY UNIT PLAN**

**A Supplement To The  
Hill College Emergency  
Operation Plan (EOP)**



Hill College

Texas Heritage Museum

2016

The Texas Heritage Museum Safety and Recovery Unit Plan: A  
Supplement to the Hill College Emergency Operation Plan (EOP)

Reviewed & Approved by:

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*The Texas Heritage Museum Emergency Preparedness & Response Manual was approved on 7/22/2009 and then revised on 08/15/2012. Then this document was revised & renamed the Texas Heritage Museum Safety and Recovery Unit Plan: A Supplement to the Hill College Emergency Operation Plan (EOP) approved by the Dean of the Texas Heritage Museum and the President of Hill College on 09/26/2016.*

## **Table of Contents**

<b>Section</b>	<b>I</b>	<b>Page # 5</b>	<b>Introduction to Hill College Emergency Operation Plan (EOP) and the Texas Heritage Museum Safety &amp; Recovery Unit Plan</b>
<b>Section</b>	<b>II</b>	<b>Page # 6</b>	<b>Texas Heritage Museum Safety and Recovery Unit</b>
<b>Section</b>	<b>III</b>	<b>Page # 7</b>	<b>Critical Incident Involving Museum Artifacts and Documents Operations</b>
<b>Section</b>	<b>IV</b>	<b>Page # 10</b>	<b>Texas Heritage Museum Safety and Recovery Unit Personnel</b>
<b>Section</b>	<b>V</b>	<b>Page # 11</b>	<b>Emergency Notification List</b>

## **Appendices**

<b>Appendix</b>	<b>1</b>	<b>Page # 15</b>	<b>Objects to be moved on <u>SHORT &amp; LONG TERM NOTICE</u> in all areas</b>
<b>Appendix</b>	<b>2</b>	<b>Page # 23</b>	<b>Electrical Equipment to be turned off &amp; Utility Disconnects</b>
<b>Appendix</b>	<b>3</b>	<b>Page # 24</b>	<b>Texas Heritage Museum Layout</b>
<b>Appendix</b>	<b>4</b>	<b>Page# 25</b>	<b>Texas Heritage Museum Fire Extinguishers Locations</b>
<b>Appendix</b>	<b>5</b>	<b>Page# 26</b>	<b>Texas Heritage Museum BA Circuits / CCTV</b>
<b>Appendix</b>	<b>6</b>	<b>Page# 27</b>	<b>Texas Heritage Museum Smoke Detector Circuits</b>
<b>Appendix</b>	<b>7</b>	<b>Page# 28</b>	<b>Texas Heritage Museum Heat Duct and MFA</b>

<b>Appendix</b>	<b>8</b>	<b>Page# 29</b>	<b>Texas Heritage Museum A/V Circuits</b>
<b>Appendix</b>	<b>9</b>	<b>Page# 30</b>	<b>How to use a Fire Extinguisher</b>
<b>Appendix</b>	<b>10</b>	<b>Page# 32</b>	<b>Collections Response and Recovery</b>
<b>Appendix</b>	<b>11</b>	<b>Page# 54</b>	<b>Safety Equipment Procedures Checklist</b>
<b>Appendix</b>	<b>12</b>	<b>Page# 57</b>	<b>Vendor Contracts and Memorandum of Agreements</b>
<b>Appendix</b>	<b>13</b>	<b>Page# 58</b>	<b>FEMA Guidelines Booklet</b>
<b>Appendix</b>	<b>14</b>	<b>Page# 59</b>	<b>Emergency Response and Salvage Wheel</b>
<b>Appendix</b>	<b>15</b>	<b>Page# 60</b>	<b>Disaster Kits check out sheet</b>

## Section I

# Introduction to the Hill College Emergency Operation Plan (EOP) & Texas Heritage Museum Safety and Recovery Unit Plan

The Texas Heritage Museum staff will serve as the Texas Heritage Museum Safety and Recovery Unit as indicated in the Hill College Emergency Operation Plan (EOP). The purpose of the EOP is to direct actions intended to preserve life and protect property from further destruction in the event of an emergency. The overall plan establishes an emergency organization to direct and control operations during an emergency situation by assigning responsibilities to specific entities. All essential entities are to utilize any and all available resources when mitigating against, preparing for, responding to, and recovering from a natural or man-made emergency.

In the event of an emergency or disaster, one predetermined organizational system is needed to coordinate the numerous departments' efforts to handle the incident. The Incident Command System (ICS) provides for clear authority and a coordinated response to the diverse activities necessary to successfully respond to an emergency situation. The ICS maximizes efficient utilization of resources; and responds in a controlled and well-organized manner to an emergency. Risks to students, personnel, visitors, and emergency responders are minimized when the ICS is in place.

### Emergency Service Units

In a declared emergency that requires a campus/center to be formally closed; all students, visitors, and college employees not essential to the emergency will be instructed to leave the campus/center.

In extreme circumstances when campus/center self-sufficiency is required, there may be a need to dispatch and mobilize individuals with specialized knowledge or skills willing to assist during an emergency. This Emergency Response and Management Plan identifies several Emergency Service Units (ESU); others may evolve throughout the course of a major emergency.

Personnel possessing the knowledge, skill, or belonging to the work functions identified in this section should report to the EOC and Planning Officer during an emergency for specific assignments.

Participation in an Emergency Service Unit is voluntary unless the service provided is included as part of a person's regular job duties or job description.

**NOTE:** Safe and orderly evacuation of students, staff, and visitors from classrooms and campus/center is the responsibility of all Hill College employees.

The highest priority for all individuals participating as part of an Emergency Service Unit is personal safety. An employee, student, or visitor is not required to place her/himself at risk, nor participate in emergency response activities if she/he feels the circumstances are unsafe or pose an undue risk.

## **Section II**

# **Texas Heritage Museum Safety and Recovery Unit**

### **Purpose**

#### **Texas Heritage Museum Safety and Recovery Unit**

This unit will be activated if the museum facility and/or artifacts are exposed, threatened, and/or damaged from a disaster. The purpose of the unit is to implement procedures to protect the artifacts from outside looters and prevent further environmental damage. This unit will follow the Hill College Emergency Operation Plan (EOP) and the Texas Heritage Museum Safety and Recovery Unit Plan, and work in conjunction with the Hill College Incident Command Team (ICT).

### **Scope**

#### **Texas Heritage Museum Safety and Recovery Unit**

The purpose of the Texas Heritage Museum Safety and Recovery Unit is to execute a concise, informed plan using the Texas Heritage Museum Safety and Recovery Unit Plan for dealing with emergency situations with the Texas Heritage Museum collections. Most of the disastrous situations the museum could be faced with will fall within two types: those for which there is some advance warning, and those with no warning at all. In any emergency, it is important for each staff member to know what he/she is responsible for, and what the museum's general response and goals are. In most instances, the standard chain of command that exists in our daily operations will operate effectively in an emergency situation. All museum personnel will report to the Dean of the Texas Heritage Museum or the appointed designee. There may be instances, however, when employees are required to function outside of their usual area, and should have some idea of what is happening with other functions of the museum.

A calculated response to a disaster requires a procedural plan broad enough in scope to apply to the most statistically probable occurrences. The creation of this plan requires an examination of risk exposure; creation of an organized response; and a review process that results in updates and improvements to the plan based on performance evaluations.

## **Section III**

### **Critical Incident Involving Museum Artifacts and Documents Operations**

#### **Prevention and Preparation**

The Texas Heritage Museum Safety and Recovery Unit Plan will only be employed when there is an actual or imminent threat to the museum artifacts. The Texas Heritage Museum staff will prepare for emergency events by using a variety of resources to communicate emergency response procedures. These include but are not limited to the following methods:

1. Routinely develop, review, exercise, and update the Texas Heritage Museum Safety and Recovery Unit Plan;
2. Develop training and drills to enhance readiness of emergency response to the museum;
3. Test and maintain museum emergency resources and equipment;
4. Assure that all relevant continuity of the Texas Heritage Museum Safety and Recovery Unit Plan is current.

The Texas Heritage Museum Safety and Recovery Unit personnel will follow the Hill College EOP plan for all situations, the Texas Heritage Museum Safety and Recovery Unit Plan only covers the protection of artifacts and documents. If a natural disaster is likely to occur at Hill College and the museum staff has ample warning, they will prepare for emergency events by using a variety of resources to protect the museum's artifacts and documents. These include but are not limited to the following methods:

If a natural disaster (i.e. hurricane) is likely to occur at Hill College, and the museum staff has ample warning, they will place all important artifacts and documents in the Hill College registrar vault in the administration building and/or the museum's reinforced vaulted rooms (i.e. collections storage and Weapons Gallery).

If a natural disaster is likely to occur at Hill College, and the museum staff has little warning (i.e. tornado), first the museum staff will make sure all employees and visitors go to the reinforced vaulted room (Weapons Gallery) and are accounted for. Second, if time remains, the museum staff will secure any artifacts and documents on the "Objects to be moved on short notice" list to the Weapon's Gallery or to the collections storage vaulted room.

If a fire occurs at the museum, first the museum staff will make sure all employees and visitors go outside to the designated area (front sidewalk of museum) and make sure everyone is accounted for. As employees are exiting the building, any artifacts on the "Objects to be moved on short notice" list may be taken outside with them.

If a bomb threat occurs, first the museum staff will make sure all employees and visitors go outside to the designated area (back of museum) and make sure everyone is accounted for. As employees are exiting the building, any artifacts on the "Objects to be moved on short notice" list may be taken outside with them.

## Response

The Dean of the Texas Heritage Museum will be notified of a critical incident involving artifacts immediately. Once the Dean has been notified he will contact the President and the Vice President of Student Services, brief them on the situation and determine to which level the critical incident belongs. The Dean of the Texas Heritage Museum currently serves as the Hill College Coordinator of Emergency Management.

**Museum Level 1** only involves an isolated incident in the museum that has affected a few artifacts or documents. Examples may be situations such as a leaky ceiling that has damaged a few books or air conditioning that has gone out affecting the humidity which could be damaging to certain artifacts. At this level, the affected artifacts can be handled by the staff internally.

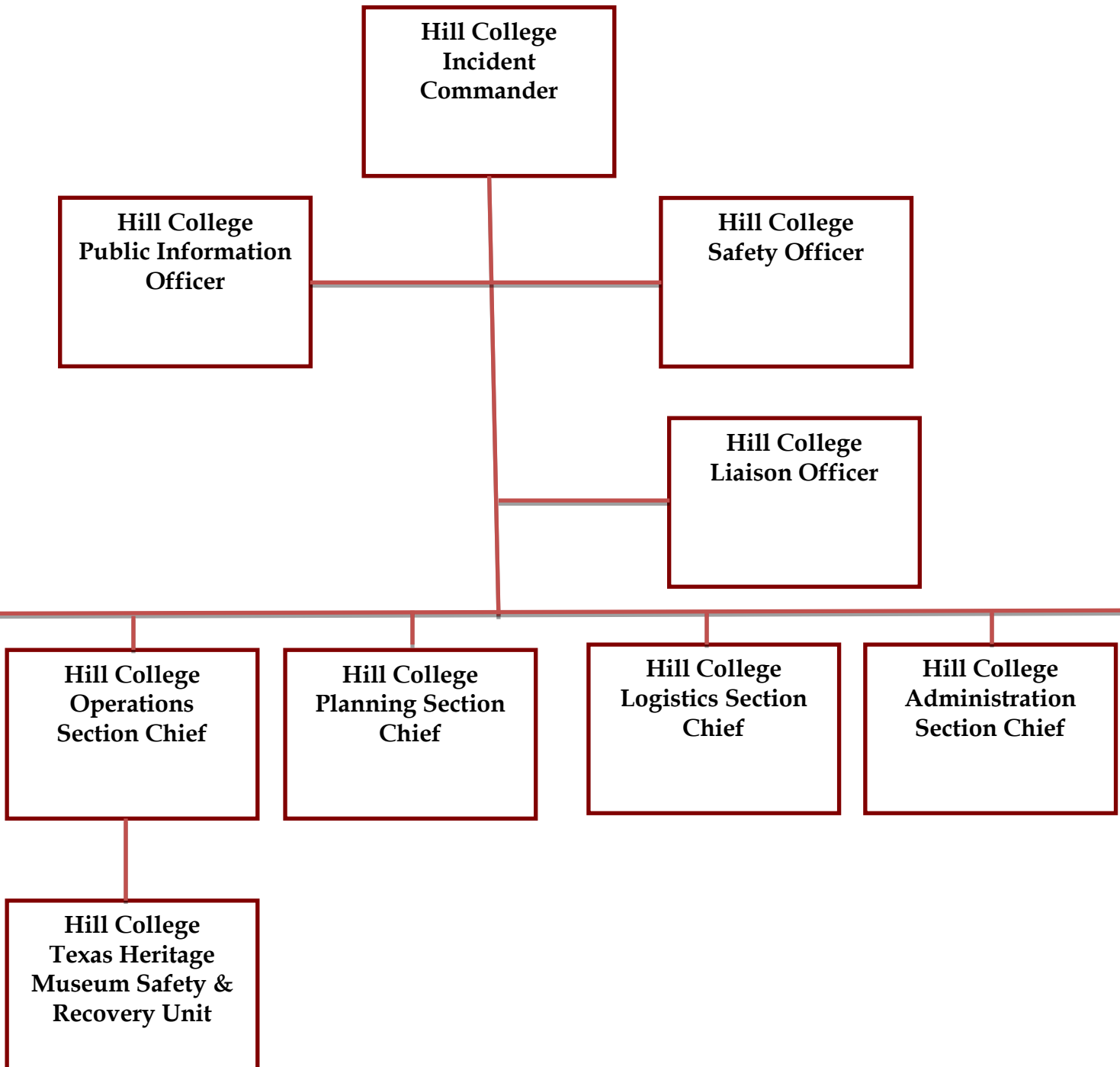
**Museum Level 2** involves a major incident in the museum that has damaged large areas of the museum and/or artifacts. This level will require the Dean to contact the President and the Vice President of Student Services, and activate the Texas Heritage Museum Safety and Recovery Unit. Level 2 could require other Hill College employees and community involvement at the museum. Also at this level, the museum building might or might not be the only area affected. If more of Hill College campus is affected, we will coordinate our efforts with the Hill College EOP. Examples may be situations such as a tornado that damaged Hill College campus.

**Museum Level 3** will involve a major incident that has not only affected the museum, but also the Hill College campus, and the City of Hillsboro. This level will require the Dean to immediately contact the President and the Vice President of Student Services. All museum staff will need to try to contact the museum dean for updates on their homes and their own well being (all Texas Heritage Museum employees live within the City of Hillsboro). If staff is unable to report to the museum due to their own homes being destroyed, the Dean will activate Memorandum of Agreements (MOA). This level will require the Dean to activate the Texas Heritage Museum Safety and Recovery Unit, and will require other Hill College employees and community involvement. This stage will also require the museum to contract with a conservator to help preserve the affected artifacts. If more of Hill College campus is affected, we will coordinate our efforts with the Hill College EOP. Examples may be situations such as a tornado that damaged Hill College campus.

**Museum Level 4** will involve a major incident that has not only affected the museum, but multiple Hill College campuses and centers, the City of Hillsboro, and other surrounding cities and counties. This level will require the Dean to immediately contact the President and the Vice President of Student Services. All museum staff will need to try to contact the museum dean for updates on their homes and their own well-being (all Texas Heritage Museum employees live within the City of Hillsboro). If staff is unable to report to the museum due to their own homes being destroyed, the Dean will activate Memorandum of Agreements (MOA). This level will require the Dean to activate the Texas Heritage Museum Safety and Recovery Unit, and will require other Hill College employees and community involvement. This stage will also require a contract with a conservator to help preserve the affected artifacts. If more of Hill College campus is affected, we will coordinate our efforts with the Hill College EOP. Examples may be situations as hurricanes; Comanche Peak nuclear incident; ice storms; and incidents involving multiple victims of violence or death. In all cases, a Hill College district-wide Emergency Operations Center may be activated, and the appropriate support and operational plans implemented.



**Example of a Hill College ICS Organizational Chart with the Texas Heritage Museum Safety & Recovery Unit shown below**



**Section IV**  
**Texas Heritage Museum Safety and Recovery Unit Personnel**

## **Section V**

### **Emergency Notification List**

In the event of an emergency situation that requires notification of the entire staff, the following list will provide the quickest means to relay information.

#### **Museum Call List**

## Other Emergency Notification List

## Museum Professional Services list

## APPENDIX 1

### Objects to be moved on SHORT NOTICE in Galleries & Collection

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

<b>Object</b>	<b>Area</b>	<b>Location</b>
<b>Harris MOH</b>	<b>South of Lobby</b>	<b>Medal Of Honor</b>
<b>Five Other Harris Medals</b>	<b>South of Lobby</b>	
<b>Audie Murphy Uniform</b>	<b>OD Section, in case</b>	<b>WWII</b>
<b>Audie Murphy Knife and Shotgun</b>	<b>OD Section, in case</b>	
<b>Audie Murphy Cognac</b>	<b>OD Section, in case</b>	
<b>Audie Murphy Medal of Honor</b>	<b>OD Section, in case</b>	
<b>Audie Murphy Medals</b>	<b>OD Section, in case</b>	
<b>Arkansas Post "Hand" Flag</b>	<b>Center Post, West Side</b>	<b>Civil War Gallery</b>
<b>Parson's Flag</b>	<b>Center Post, North Side</b>	
<b>Civil War Note Collection</b>	<b>Safe in Collections</b>	<b>Collection Room</b>

## Objects to be moved on SHORT NOTICE in HRC, Hill College Press, Administration

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

Object	Area	Location
<b>Bob Bullock San Jacinto Flag</b>	<b>On North Wall Main Room</b>	<b>HRC</b>
<b>Hill College Football Trophy</b>	<b>North Wall, Glass Case, Bottom Left</b>	
<b>Original letters and manuscripts</b>	<b>Filing Cabinet # 24 All Drawers</b>	
<b>Medal of Honor Folders</b>	<b>Filing Cabinet # 5 &amp; # 6 All Drawers</b>	
<b>Hood's Texas Brigade Collection</b>	<b>Filing Cabinet # 9 All Drawers</b>	
<b>Civil War Photographs</b>	<b>Filing Cabinet # 7 All Drawers</b>	
<b>Hill College Press Books</b>	<b>Entrance Case into the Historical Research Center</b>	
<b>Records</b>	<b>In closet next to door to HRC; Top drawer of the filing cabinet (Contains files RE Hill College Press, contracts, correspondence, author's files, and misc.)</b>	<b>HCP</b>
<b>Past Perfect Passport Drives</b>	<b>In the Safe in the Director's Office</b>	<b>Administration offices</b>
<b>Deed of Gifts Original Copies</b>	<b>In the Safe in the Director's Office</b>	<b>Administration offices</b>

## Objects to be moved on LONG TERM NOTICE in Galleries & Collection

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

### BY OBJECT (pg. 1 of 2)

Object	Area	Location
Arkansas Post "Hand" Flag	Center Post, West Side	Civil War Gallery
Parson's Flag	Center Post, North Side	
Sibley Reunion Flag	South Wall, by Weapons Gallery Door	
All NFA and Non NFA Firearms	In all cases	
San Jacinto Pistols	Left Side, in case	Tex. Rev. Gallery
Alamo Model	Corner, by Theater	
All NFA and Non NFA Firearms	In all cases	
Audie Murphy Uniform	OD Section, in case	WWII
Audie Murphy Knife and Shotgun	OD Section, in case	
Audie Murphy Cognac	OD Section, in case	
Audie Murphy Medal of Honor	OD Section, in case	
Audie Murphy Medals	SE Hallway to HRC	
All NFA and Non NFA Firearms	In all cases	
Galiga Medals	Green Section, Around Curve, on Pedestal	



## Objects to be moved on LONG TERM NOTICE in Galleries & Collection Continued

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

### BY OBJECT (pg. 2 of 2)

<b>Object</b>	<b>Area</b>	<b>Location</b>
<b>All NFA and Non NFA Firearms</b>	<b>In all cases</b>	<b>Weapons Gallery</b>
<b>Entire Contents</b>	<b>Grenade Case, NW Corner</b>	
<b>Entire Contents</b>	<b>Sp. Am. Case, SW Corner</b>	
<b>Medal</b>	<b>Punitive Case, SE Corner</b>	
<b>Medals and Dog tags</b>	<b>WWI Case, NE Corner</b>	
<b>All NFA and Non NFA Firearms</b>	<b>In Weapons Gallery, all cases</b>	<b>Vietnam Gallery</b>
<b>Entire Contents</b>	<b>Air War Case West Wall</b>	
<b>All Contents and painting</b>	<b>South of Lobby</b>	<b>Medal Of Honor</b>
<b>Civil War Note Collection</b>	<b>Safe in Collections</b>	<b>Collection Room</b>

## Objects to be moved on LONG TERM NOTICE in Historical Research Center

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

### BY OBJECT (pg 1 of 2)

<b>Object</b>	<b>Area</b>	<b>Location</b>
<b>Bob Bullock San Jacinto Flag</b>	<b>On North Wall Main Room</b>	<b>HRC</b>
<b>Hill College Football Trophy</b>	<b>North Wall, Glass Case, Bottom Left</b>	
<b>Original letters and manuscripts</b>	<b>Filing Cabinet # 24 All Drawers</b>	
<b>Medal of Honor Folders</b>	<b>Filing Cabinet # 5 &amp; # 6 All Drawers</b>	
<b>Hood's Texas Brigade Collection</b>	<b>Filing Cabinet # 9 All Drawers</b>	
<b>Civil War Photographs</b>	<b>Filing Cabinet # 7 All Drawers</b>	
<b>Hill College Press Books</b>	<b>Entrance Case into the Historical Research Center</b>	
<b>All Primary Archive material</b>	<b>Throughout the entire HRC</b>	
<b>Col. Simpson Bust</b>	<b>Next to Front Desk</b>	

## Objects to be moved on LONG TERM NOTICE in Hill College Press

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

### BY OBJECT (pg. 1 of 1)

<b>Object</b>	<b>Area</b>	<b>Location</b>
<b>Records</b>	<b>In closet next to door to HRC; Top drawer of the filing cabinet (Contains files RE Hill College Press, contracts, correspondence, author's files, and misc.)</b>	<b>HCP</b>
<b>Books</b>	<b>Depending on time available: Copies of Hill College Press Books on book shelf to the right of the door. (These are the only extra copies we have of these published works besides the ones in the exhibit cases in the foyer.)</b>	
<b>Computer Disks</b>	<b>In the computer desk: Right hand top drawer (Contains disks of works in progress and various other items relating to the computer.)</b>	
<b>Records</b>	<b>In credenza by the door to the HRC: Files of materials, manuscripts, and correspondence with authors with whom projects are active and in progress. Left top drawer: Gracy files and materials, right, middle drawer: Burnett (Lehmann) files and materials.</b>	
<b>Books</b>	<b>All Hill College Press Books displayed in HRC cases</b>	<b>HRC</b>

## Objects to be moved on LONG & SHORT TERM NOTICE MUSEUM RECORDS

This list has been made based on an artifact's: importance to history, importance to the collection, relevance to the mission statement susceptibility to damage, accessibility, and ability to move.

### BY OBJECT (pg 1 of 1)

<b>Object</b>	<b>Area</b>	<b>Location</b>
<b>Accession Records</b>	<b>In Filing Cabinets</b>	<b>Curator Lab &amp; HRC Reading Room</b>
<b>Computer PCs</b>	<b>All areas</b>	<b>In all offices</b>
<b>Past Perfect Passport Drives</b>	<b>In the Safe in the Director's Office</b>	<b>Administration offices</b>
<b>Deed of Gifts Original Copies</b>	<b>In the Safe in the Director's Office</b>	<b>Administration offices</b>

## APPENDIX 2

### Electrical Equipment to be turned off & Utility Disconnects

In the event of extended power outages, it is advisable to unplug or turn off certain electrical equipment that will make start up difficult for the utility company.

1. Unplug computer systems
2. Turn off all HVAC systems
3. Unplug refrigerator in kitchen
4. Unplug coffee pot in kitchen

#### GENERAL GUIDELINES ABOUT ELECTRICAL SYSTEMS

1. Do not unplug security system
2. Do not unplug telephone lines
3. When power is restored, immediately look for signs of overload or fire
4. When power is restored, reactivate HVAC systems

#### Utility Disconnects

Go to outside utility room by Directors office to turn off all main utilities

The main water line

The gas hot water heater

The main power supply

The main natural gas line shut off valve is on the outside west wall of the utility room

## **APPENDIX 3**

### **Texas Heritage Museum Layout**

## **APPENDIX 4**

### **Texas Heritage Museum Fire Extinguishers Locations**

## **APPENDIX 5**

### **Texas Heritage Museum BA Circuits / CCTV**



## **APPENDIX 6**

### **Texas Heritage Museum Smoke Detector Circuits**

## **APPENDIX 7**

### **Texas Heritage Museum Heat Duct and MFA**

## **APPENDIX 8**

### **Texas Heritage Museum A/V Circuits**

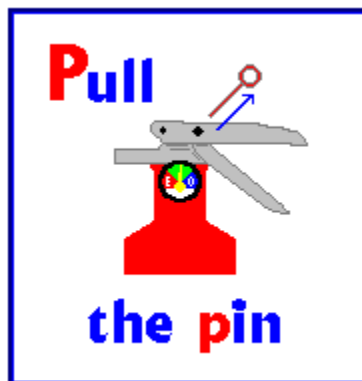
## APPENDIX 9

### How to use a Fire Extinguisher



It's easy to remember how to use a fire extinguisher if you can remember the acronym P.A.S.S.

- “P”** --- **PULL** the pin
- “A”** --- **AIM** the extinguisher nozzle at the base of the flames
- “S”** --- **SQUEEZE** trigger while holding the extinguisher upright
- “S”** --- **SWEEP** the extinguisher from side to side



**Pull the pin.**

This will allow you to discharge the extinguisher.



**Aim at the base of the fire.**

If you aim at the flames (which is frequently the temptation), the extinguishing agent will fly right through and do no good. You want to hit the fuel.



**Squeeze the top handle or lever.**

This depresses a button that releases the pressurized extinguishing agent in the extinguisher.



**Sweep from side to side**

Start using the extinguisher from a safe distance away, and then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

## APPENDIX 10

### Collections Response and Recovery

Each type of collections material requires different treatment following a natural disaster. Some objects are more susceptible to damage than others and must be salvaged and treated immediately to help prevent loss. These general guidelines are from various other museums, states, regions, and federal disaster recovery plans and are to be used for reference only, a conservator must be consulted and/or contract for recovery efforts.

If possible, a photographic and written record should be made of emergency conditions and salvage activities.

Assembling and salvaging original copies of collections records should be a priority. Following this, artifacts should be recovered based on their importance to the collection and their susceptibility to destruction due to the disaster.

#### General Guidelines – Water Damage

The following first steps should be taken prior to beginning artifact recovery in order to delay mold growth:

- 1) Remove standing water from building
- 2) Reduce the temperature to less than 65 degrees
- 3) Lower relative humidity by adjusting the humidification system or installing rented dehumidifiers
- 4) Circulate air with fans. Open doors if security is available.

The majority of paper and photographic records should be packed and shipped to cold storage. Freezing will stabilize wet materials until they can be dried.

Prepare packing materials and move records to packers.

Pack the damaged collections according to instructions for specific materials. Begin with items on the floor and the wettest items, and then items on the ends of shelves.

Number the crates and record their contents. Label crates with Type tags; mark cardboard boxes directly with a waterproof pen. Record separately: accession numbers or description of objects, media priority, condition of contents as wet, partially wet, or damp, and the destination.

Move crates and boxes to a truck in an accessible location.

If the damage is substantial and the salvage will take more than 10 hours, loosen tightly packed document boxes, books, and pamphlets so they do not jam into the shelves.

Do not separate remaining dry books and documents when the relative humidity is high. If the RH remains high during cleaning and repairing of storage areas, remove to an air conditioned room.

### **Packing Guidelines – Water Damage**

Be extremely careful when handling wet materials—they are all fragile and can be easily damaged during packing and transport. If cardboard boxes are saturated or weak, replace them with new containers. Borderline boxes may be reinforced by packing inside plastic crates.

Pack files in order and retain documentary information. If the label is loose or lost, pencil identifying information and location on a piece of paper, and insert it in the volume or box. Don't mark wet paper. Film and tape reels and the backs of picture frames can be marked with a grease pencil.

During removal, do not stack materials in piles or on the floor. If boxes are put on pallets, do not mix different sizes of boxes or stack more than three boxes high.

If there is time, different materials should be packed separately, in the following categories: by media, moldy from uncontaminated, and wet from partially wet and damp.

### **Drying Methods**

**Air drying:** Items are dried in a work space at room temperature. To discourage mold growth, the temperature should be below 18 C and the RH as low as possible (at all costs, below 60%) and fans should keep the air circulating. Materials are spread out on or interleaved with absorbent papers

**Freeze drying:** Objects are dried in a vacuum chamber at temperatures below 0 C. The water passes from ice to vapor without becoming liquid, even though heat may be applied to the shelves to speed up the process. Freeze drying prevents additional bleeding or feathering of soluble media, distortion of bindings, and the sticking together of coated materials.

**Vacuum drying:** Items are dried in a vacuum chamber at temperatures above 0 C. A vacuum is drawn, heated air is put into the chamber, and a vacuum is applied again to pull out moisture. The process may be repeated again.

**Freezer drying:** Objects are packed in permeable containers and kept in a cold storage vault for months. Over time, moisture sublimates out of the records, in the same way that food gets freezer burn. This is a slow process what will dry damp and partially wet items.

**Desiccant Dehumidification:** Objects are dried, while still on their shelves, by large dehumidifiers that are brought on site. The temperature and relative humidity should be controlled. This method may not be suitable for drying most collections.

## **Priority Materials – Water Damage**

Almost all objects need attention within 48 hours following water damage to prevent mold growth. Within each category of artifacts, specific items become salvage priorities, as they are most susceptible to damage. The following types of objects should be recovered immediately:

### **Documents & Manuscripts**

Soluble inks: felt pens, colored pens, ball point pens  
Parchment & vellum

### **Scrapbooks**

All

### **Maps & Plans**

Soluble media: photo reproductive processes, hand colored  
Drafting linens  
Coated papers

### **Books & Pamphlets**

Leather & vellum bindings  
Coated papers

### **Works of Art on Paper**

Soluble media: watercolors, inks, hand colored  
Coated papers

### **Paintings**

All

### **Computer Media**

Floppy disks  
Tapes  
CD & CD-ROMs

### **Sound & Video Recordings**

Shellac & Acetate discs  
Sound & Video tapes

### **Cased Photographs**

Ambrotypes  
Daguerreotypes  
Tintypes



### **Color Photographs**

Dye transfer

### **Black & White Prints**

Carbon prints

Woodburytypes

### **Negatives**

Wet collodion glass plates

Deteriorated nitrates

Deteriorated acetates

### **Transparencies**

Additive color transparencies

### **Textiles**

Archaeological textiles

Textiles with bleeding dyes

### **Leather**

Leather with “red rot”

### **Wood**

Polychromed objects

## **Salvage Instructions – Water Damage**

Water damage is the most common threat to collections as it can result from flooding, broken pipes, ceiling leaks, or the water used to extinguish a fire. The following pages have detailed instruction on the proper way to treat various kinds of materials damaged by water. These general salvage guidelines included below are to be used for reference only, a conservator must be consulted and/or contract for recovery efforts.

### **Books: Cloth or Paper Covers**

**Priority:** Freeze or dry within 48 hours. Coated paper must not be allowed to air dry in a clump or it will permanently block together. If slightly damped and the pages are separable, air dry interleaved pages before items have an opportunity to dry. If saturated, coated paper must be frozen as soon as possible for subsequent vacuum freeze-drying.

**Handling Precautions:** Do not move items until a place has been prepared to receive them. Do not open or close books or separate covers. Oversized books need to be fully supported; it may only be possible to move one at a time.

**Preparation for Drying:** Closed books that are muddy should be rinsed before freezing. If air drying is not possible, books should be frozen within 48 hours. Separate with freezer paper, pack spine down in milk crates, plastic boxes, or cardboard boxes lined with plastic sheeting.

Coated paper requires each and every page to be interleaved with a non-stick material such as waxed paper or Hollytex. If the leaves cannot be separated without further damage, the book cannot be air dried successfully and must be prepared for vacuum freeze-drying.

**Supplies Needed:**

Bookends/Bricks  
Freezer/Waxed Paper  
Hollytex  
Polyethylene Film  
Sponges  
Screw Driver  
Silicon Release Paper

Bread Trays  
Dehumidifier  
Fans  
Plywood Sheets  
Plexiglass sheets  
Polyester Film  
Tin Snips

Blotter paper  
Extension Cords  
Masking Tape  
Scissors  
Unused Newsprint  
Pliers  
Milk Crates

**Drying Procedure:** Air drying is suitable for small quantities of books (less than 100 volumes) that are not thoroughly soaked. Requires space in an area away from the disaster to spread the books out. Books are stood upright and gently fanned open to dry. Keep the air moving at all times using fans directed away from the volumes. Use dehumidifiers as needed to maintain humidity at or below 50%.

Oversize volumes must lay flat and should be turned when the blotter is changed. Pages should be interleaved with sheets of unused newsprint or blotting paper that is slightly larger than the book leaf and changed as it becomes saturated.

Freeze Drying is suitable for large quantities of books and books that are very wet. Pack as described above and ship to drying facility.

Vacuum Freeze Drying is suitable for large quantities of books. Wet coated paper can only be successfully dried by this method. Pack as described above and ship to drying facility. Pack carefully, as volumes packed with distortions will retain that distortion permanently after vacuum freeze drying.

### **Books: Leather or Vellum Covers**

**Priority:** Freeze as soon as possible; vellum will distort and disintegrate in water.

**Handling Precautions:** Do not move items until a place has been prepared to receive them. Do not open or close books or separate covers. Oversized books need to be fully supported; it may only be possible to move one at a time.

**Preparation for Drying:** Closed books that are muddy should be rinsed before freezing. If air drying is not possible, books should be frozen, preferably blast frozen, as soon as possible. Separate with freezer paper, pack spine down in milk crates, plastic boxes, or cardboard boxes lined with plastic sheeting.

**Supplies Needed:**

Bookends/Bricks  
Freezer/Waxed Paper  
Hollytex  
Unused Newsprint  
Pliers  
Sponges

Bread Trays  
Dehumidifier  
Fans  
Plywood Sheets  
Polyethylene Film  
Screw Driver  
Silicon Release Paper

Blotter Paper  
Extension Cords  
Masking Tape  
Scissors  
Plexiglass Sheets  
Tin Snips  
Milk Crates

**Drying Procedure:** Freeze Drying is the preferred method. Books should be separated with freezer paper and packed spine down in milk crates or plastic boxes.

Air Drying may be used for items that are not very wet. This requires space in an area away from the disaster to spread the books out. Books should stand upright and be gently fanned open to dry.

Coated Paper requires that each and every page be interleaved with a non-stick material such as waxed paper or Hollytex.

Oversize volumes must lay flat and should be turned when the blotter is changed. Pages should be interleaved with sheets of unused newsprint or blotting paper that is changed as it becomes saturated.

Keep the air moving at all times using fans. Direct fans into the air and away from the drying objects. Use dehumidifiers as needed to maintain humidity at or below 50%.

## **Magnetic Media Computer Diskettes**

**Priority:** Prolonged storage in water causes leaching of chemicals from the support. If a back-up copy is available, it is better to discard the water soaked original.

**Handling Precautions:** Store diskettes upright without crowding, in cool distilled water until you are ready to attempt data recovery. Exposure to water should not extend beyond 72 hours. If discs cannot be dried and copied within three days, the discs should be placed wet in plastic bags and frozen until drying and data recovery is possible.

**Preparation for Drying:** 5 1/4 " Disks: Remove the disk by cutting along the edge of the jacket. Carefully remove the diskette and agitate exposed disks in multiple baths of cool de-ionized or distilled water to remove all visible dirt.

3 1/2" Disks: Pack wet disks in plastic bags and ship overnight to a computer media recovery service vendor for data recovery. Do not dry discs first: media impurities can etch magnetic coating.

**Drying Methods:** 5 1/4" Disks: Dry with lint-free toweling or cheese cloth.

3 1/2" Disks: Send disks to a professional data recovery vendor. Do not attempt to copy. Damage to your hardware could result.

**Data Recovery:** In order to ensure the preservation of data on disks that have been wet, it is prudent to copy it to a new disk. Insert the disk that has been dried into an empty jacket made by removing a new disk. The water damaged disk that has been placed in the new jacket is inserted into a disk drive. Copy and verify that the information has been transferred, then discard the damaged disk. You need only prepare one new jacket for each five to ten disks since the same jacket can be reused several times. Most diskettes can be salvaged unless the diskette itself is magnetically damaged or warped. If copying is not successful, consult computer recovery services.

## **Magnetic Media Reel to Reel Tapes**

**Priority:** Air dry within 72 hours.

**Handling Precautions:** Pack vertically into plastic crates or cardboard cartons. Don't put heavy weight or pressure on the sides of the reels.

<b>Supplies Needed:</b>	Blotter paper	Bubble pack
Soft bristle brushes	Cheese Cloth	Clothes Line
Dehumidifier	Distilled Water	Falcon Squeegee
Drying Racks	Fans	Plastic Bags
Kodak Photo Flo Solution	Plastic Trays	Rust-proof Clips
Salthill Dryer	Scissors	Sponges

**Preparation for Drying:** Often contamination by water and other substances is mainly confined to the outermost layers of the tape. Do not unwind tapes or remove from the reel. In these cases, wash the exposed edges with de-ionized or distilled water.

**Drying Methods:** Air dry by supporting the reels vertically or by laying the reels on sheets of clean blotter paper. Leave the tapes to dry next to their original boxes. Use fans to keep air moving without blowing directly on the items.

Use portable dehumidifiers to slowly remove moisture from the area and objects. Bring relative humidity down to 50%.

**Additional Steps:** Once dry, the tapes can be assessed for further cleaning and duplication. This procedure is done by specialized professional vendors.

## Microfiche

**Priority:** Freeze or dry within 72 hours.

**Handling Precautions:** Do not move items until a place has been prepared to receive them and you have been instructed to do so. If the fiche cannot be air dried immediately keep them wet inside a container lined with garbage bags until they can be frozen.

<b>Supplies Needed:</b>	Blotter Paper	Bubble Pack
Soft Bristle brushes	Cheese Cloth	Clothes line
Dehumidifier	Distilled Water	Falcon Squeegee
Drying Racks	Fans	Plastic Bags
Kodak Photo Flo Solution	Plastic Trays	Rust-proof clips
Salthill Dryer	Scissors	Sponges

**Drying Methods:** Freeze if arrangement cannot be made to air dry the fiche quickly. Fiche should be removed from the paper jackets to dry. Jackets should be retained to preserve any information printed on them, but this information should be transferred to new jackets once the fiche is dry and ready to be stored again. The best air drying method is to clip the fiche to clothes lines with rust-proof clips.

Fiche has been successfully vacuum freeze dried, though freeze-drying of photographic materials is not widely recommended. If dealing with large quantities of fiche this option should be investigated.

## Microfilm and Motion Picture Film

**Priority:** Rewash and dry within 72 hours. Wet film must be kept wet until it can be reprocessed.

**Handling Precautions:** Wipe outside of film or boxes before opening. Cans that are wet on the outside may contain dry film that should be separated from wet material. Do not remove wet microfilm from boxes; hold cartons together with rubber bands. Dry film in damp or wet boxes should be removed and kept together with the box. Do not move items until a place has been prepared for them.

**Packing Methods:** Wet microfilm should be packed in plastic trays filled with water until reprocessed. Pack wet motion picture film in a container lined with plastic garbage bags.

<b>Supplies Needed:</b>	Blotter Paper	Bubble Pack
Soft Bristle Brushes	Cheese Cloth	Clothes Line
Dehumidifier	Distilled Water	Falcon Squeegee
Drying Racks	Fans	Plastic Bags

Kodak Photo Flo Solution  
Salthill Dryer

Plastic Trays  
Scissors

Rust-proof clips  
Sponges

**Drying Methods:** A professional processor should be contacted to rewash and dry both microfilm and motion picture film.

## **Paintings On Canvas**

**Priority:** Begin drying within 48 hours to prevent mold growth.

**Handling Precautions:** Move items only after a place has been prepared to receive them. If the frame is unstable, remove from painting, pad corners with corrugated cardboard, bubble wrap, or unused newsprint, and transport to area dealing with wood objects.

**Packing Method:** Pad corners of frame or painting with corrugated cardboard, bubble wrap, or unused newsprint. Transport paintings vertically; stand upright with corrugated cardboard between paintings so painted surfaces do not touch a rough surface.

**Supplies Needed:**

Corrugated Cardboard  
Strainer

Blotter Paper  
Bubble Wrap  
Dehumidifier

Fans  
Unused Newsprint

**Preparation for Drying:** Remove painting from frame (see “Paper: Framed or Matted, Preparation for Drying”).

**Drying Procedure:** Prepare a horizontal bed of blotter paper and unused newsprint, equal in thickness to the paint layer, with top-most layer of strong clean tissue. Lay painting, still on stretcher/strainer, face down on this surface. Remove any remaining backing or labels from the painting, to expose wet canvas. Retain and tag all associated labels, parts, and/or components that are removed or detached from the painting or frame.

Place cut-to-fit blotters or unused newsprint against this back, and apply a slight amount of pressure so that the blotter makes good contact with the entire exposed canvas surface. Repeatedly change backing blotter, being careful not to create impressions in the canvas. **DO NOT CHANGE FACING MATERIALS.**

Use fans to keep air moving in the room without blowing directly on the paintings. Use portable dehumidifiers to slowly remove the moisture from the area. Bring the relative humidity down to 50%.

When dry to the touch, remove backing blotter and pick up painting. If front facing tissue is still attached to painting front, do not attempt to remove it, since it will hold the painting surface together until it can be consolidated by a conservator.

Consult with a conservator for any questions or problems and all circumstances not adequately covered by the above instructions.

## **Paper Coated**

**Priority:** Coated paper must not be allowed to air dry in a clump or it will permanently block together. If saturated, freeze within six hours for subsequent vacuum freeze-drying. If damp, separate and air dry before items have an opportunity to dry.

**Handling Precautions:** Physical manipulation should be kept to a minimum to avoid disruption of the water soluble coating and media, which can result in loss of information.

**Preparation for Drying:** Air Drying: Secure a clean, dry environment where the temperature and humidity are as low as possible.

Freezing: Remove drawers from flat files; ship and freeze stacked with 1"x2" strips of wood between each drawer. Framed or matted items must be removed from frames and mats prior to drying (see "Paper: Framed or Matted"). Preparation for Drying").

**Supplies Needed:**

Bookends/Bricks  
Freezer/Waxed Paper  
Hollytex  
Unused Newsprint  
Screw Driver  
Polyester Film  
Silicon Release Paper

Bread Trays  
Dehumidifier  
Fans  
Plywood Sheets  
Plexiglass Sheets  
Tin Snips  
Sponges

Blotter Paper  
Extension Cords  
Masking Tape  
Scissors  
Pliers  
Polyethylene Film  
Milk Crates

**Drying Methods:** Air Drying: This technique is most suitable for small numbers of records which are damp or water-damaged around the edges. Coated paper requires that each and every page be interleaved with a non-stick material such as waxed paper or Hollytex.

Damp Material: Lay single sheets or small groups of interleaved records on flat, paper covered surfaces. If small clumps of records are fanned out to dry, they should be turned at regular intervals to encourage evaporation from both sides.

If an item exhibits water-soluble media, allow to dry face up. Do not attempt to blot the item since blotting may result in offsetting water-soluble components. Wet blotted or unused newsprint should be changed and removed from the drying area.

Wet Material: When separating saturated paper, use extra caution to support large sheets. If sheets are contained in flat files, standing water should be sponged out first. If items are in L-sleeves the polyester must be removed to allow drying. Cut the two sealed edges of the film between the item and the seal. Roll back the top piece of polyester in a diagonal direction. If

there are any apparent problems with the paper support or media, stop and seek the assistance of a Conservator. Support can be given to single sheets by placing a piece of polyester film on the top of the document. Rub the film gently and then slowly lift the film while at the same time peeling off the top sheet in a diagonal direction. Lay the sheet flat; as it dries, it will separate from the surface of the film.

Keep the air moving at all times using fans. Direct fans into the air and away from the drying records. Use dehumidifiers as needed to maintain humidity at or below 50%.

Freezing: Freezing is best if there are large quantities of damp materials or if the water damage is extensive. Place manuscript boxes in milk crates or cardboard boxes. If time permits, interleave each manuscript box with freezer or waxed paper. If the boxes have been discarded, interleave every two inches of material with freezer or waxed paper.

Pack flat sheets in bread trays, flat boxes or on plywood sheets covered with polyethylene. Bundle rolled items loosely and place horizontally in boxes lined with a release layer.

Do not freeze framed items. Remove frame assemblage before freezing (See: "Paper: Framed or Matted, Preparation for Drying).

Specify vacuum freeze drying for coated paper and linen drawings; do not use vacuum thermal drying.

## **Paper** **Framed or Matted, Preparation for Drying**

**Priority:** Wet paper must be frozen or air dried within 48 hours. Framed or matted items must be disassembled prior to air drying or freezing.

**Handling Precautions:** Caution must be exercised so as not to puncture or tear the wet paper artifacts in the process of removing the frame, gazing, and mounting materials.

**Supplies Needed:**

Bookends/Bricks  
Freezer/Waxed Paper  
Hollytex  
Unused Newsprint  
Pliers  
Sponges  
Silicon Release Paper

Bread Trays  
Dehumidifier  
Fans  
Plywood Sheets  
Polyethylene Sheets  
Screw Driver  
Polyester Film

Blotter paper  
Extension Cords  
Masking Tape  
Scissors  
Plexiglass Sheets  
Tin Snips  
Milk Crates

**Preparation for Drying:** Place frame face down on a smooth, flat surface covered with blotter paper or plastic bubble pack. Carefully remove dust seal and hardware (place these metal pieces in a container so that they do not come in contact with the wet paper and inadvertently cause damage). Check if the paper object is adhered to rabbet of frame by gently pushing up on the



glazing to see that the assemblage will release without resistance. Place a piece of board (mat board, masonite, or plexiglass) over the back of the frame with all contents still in place. Using two hands, invert frame assemblage so that the glass and image are facing up. Lift off the frame then lift off the glass.

When the paper is in direct contact with the glass, carefully remove them together and lay face down on a flat surface. Consult a Conservator if the paper is sticking to the glazing.

If the glass is broken, the pieces may be held together with masking tape applied lightly over the breaks. The frame may then be laid face down and the paper removed from the back. If the pieces of glass have dropped behind the remaining glass, hold the frame in a vertical position to remove the mat and/or paper.

To remove the item from its mat, place the image facing up. Lift window mat board carefully and detach paper object from back mat by carefully cutting hinges. If the object is attached firmly and directly to mat or backing board, do not attempt to remove. Proceed to air dry paper object as recommended in “Paper: Uncoated” or “Paper: Coated” as appropriate.

## **Paper Uncoated**

**Priority:** Air dry or freeze within 48 hours. Records with water soluble inks should be frozen immediately to arrest the migration of moisture that will feather and blur inks. Records that show signs of previous bacterial growth should also be frozen immediately if they cannot be air dried.

**Handling Precautions:** Paper is very weak when wet and can easily tear if unsupported while handling.

**Supplies Needed:**

Bookends/Bricks  
Freezer/Waxed Paper  
Hollytex  
Unused Newsprint  
Pliers  
Sponges

Bread Trays  
Dehumidifier  
Fans  
Plywood Sheets  
Polyethylene Film  
Screw Driver  
Silicon Release

Blotter Paper  
Extension Cords  
Masking Tape  
Scissors  
Plexiglass Sheets  
Tin Snips  
Paper Milk Crates

**Preparation for Drying:** Pack flat sheets in bread trays, flat boxes, or on plywood sheets covered with polyethylene. Bundle rolled items loosely and place horizontally in boxes lined with a release layer. Remove drawers from flat files; ship and freeze stacked with 1”x2” strips of wood between each drawer. Frames or matted items must be removed from frames and mat prior to air or freeze drying (see: “Paper: Framed or Matted, Preparation for Drying”).

Air Drying: Secure a clean, dry environment where the temperature and humidity are as low as possible. Cover tables, floors or other flat surfaces with sheets of blotter or unused newsprint.

**Drying Methods:** Air Drying: This technique is most suitable for small numbers of records which are damp or water-damaged around the edges. Keep the air moving at all times using fans. Direct fans into the air and away from the drying records. Use dehumidifiers as needed to maintain 50% relative humidity.

Damp Material: Single sheets or small groups of records are to be laid out on paper covered flat surfaces. If small clumps of records are fanned out to dry, they should be turned at regular intervals to encourage evaporation from both sides.

If an item exhibits water-soluble media, allow it to dry face up. Do not attempt to blot the item since blotting may result in offsetting water-soluble components. Wet blotter or newsprint should be changed and removed from the drying area.

Wet Material: When separating saturated paper, use extra caution to support large sheets. If sheets are contained in flat files, standing water should be sponged out first. If items are in L-sleeves the polyester must be removed to allow drying. Cut the two sealed edges of the film in the border between the item and the seal. Roll back the top piece of polyester in a diagonal direction. If there are any apparent problems with the paper support or media, stop and seek the assistance of a Conservator. Support can be given to single sheets by placing a piece of polyester film on the top of the document. Rub the film gently and then slowly lift the film while at the same time peeling off the top sheet in a diagonal direction. Lay the sheet flat; as it dries, it will separate from the surface of the film.

Freezing: This option is best if there are large quantities or if the water damage is extensive. Place manuscript boxes in milk crates or cardboard boxes. If time permits, interleave each manuscript box with freezer or waxed paper. If the boxes have been discarded, interleave every two inches of material with freezer or waxed paper.

Do not freeze framed items. Remove frame assemblage before freezing (see: “Paper, Framed or Matted, Preparation for Drying”).

## **Photographs and Transparencies**

**Priority:** Within 24 hours: ambrotypes, daguerreotypes, tintypes, silver gelatin glass plate negatives, wet collodion glass plate negatives. Within 48 hours: color prints and film, silver gelatin prints and negatives. Salvage albumen prints and salted paper prints as soon after others as possible. Cyanotypes in alkaline flood water must be dried as soon as possible, in acidic water they become less of a priority. Consult a conservator to determine the pH of the water.

**Handling Precautions:** Do not touch emulsion, hold by the edges or margins. Always lay with emulsion side up.

**Supplies Needed:**

Blotter Paper

Bubble Pack

Soft Bristle Brushes  
Dehumidifier  
Drying Racks  
Kodak Photo Flo Solution  
Salthill Dryer

Cheese Cloth  
Distilled Water  
Fans  
Plastic Trays  
Scissors

Clothes Line  
Falcon Squeegee  
Plastic Bags  
Rust-proof Clips  
Sponges

**Preparation for Drying:** Secure a clean area to work, free from particulates. Keep the photos and/or negatives in containers of fresh cold water until they are either air dried or frozen. If allowed to partially dry in contact with each other, they will stick together. To maintain wetness until the drying process can take place, pack photos inside garbage pails or boxes lined with garbage bags.

Carefully remove prints, film positives, and negatives from their enclosures. Keep the enclosure or the file number with each film item as it contains vital information to maintain intellectual control.

Cased Photographs: Carefully open the case and place the photograph face up on blotters. Do not attempt to disassemble the components, remove debris, or wash the photograph. If the affected photo has water or debris trapped within the assemblage, contact a conservator for proper disassembling.

Uncased Images: Air dry emulsion side up on clean absorbent blotters. Remove and retain cover slips from glass lantern slides if present. Do not attempt to clean debris or wash these images; consult a conservator for this.

Black and White Prints: Place the prints in a tray and fill with cool water (60-70 degrees). Agitate the tray and change the water several times. After 15 minutes, drain the water and air dry. Reduce washing time for deteriorated and card mounted prints. The water temperature should not change radically from hot or cold because of reticulation.

Color Prints: Use the same procedure as for black and white prints but with decreased washing time: 10 minutes. Reduce washing time further for deteriorated prints.

Silver Gelatin Negatives (glass and film): Soak the films in clean, cool water (60-70 degrees) for 30 minutes. Use caution to avoid reticulation. If there are particulates on the film rinse for 10-15 minutes while gently brushing surfaces under water with a soft bristle brush, then continue washing for an additional 15 minutes. Rinse with Kodak Photo Flo Solution (1/2 ounce per one gallon of water).

Collodion Glass Plate Negatives: Do not wash or expose plates to further moisture. If any image remains, air dry immediately, emulsion side up, reverse of read right viewing.

Kodachrome Transparencies: Wash as described above for “Silver Gelatin Negatives.”

Ektachrome Transparencies: Wash as described above for “Silver Gelatin Negatives,” omitting Photo Flo, then dry. Consult a photo conservator after transparencies have dried as some may require stabilization.

Color Negatives: Wash as described above for “Silver Gelatin Negatives,” omitting Photo Flo, then dry. Consult a photo conservator after transparencies have dried as some may require stabilization.

**Drying Methods:** Order of preference: 1) air dry, 2) freeze/thaw and air dry, 3) vacuum freeze dry. Do not vacuum thermal dry or freeze dry.

Prints and Film: Dry film by hanging on a clothesline at room temperature in a dust free area. Lay glass plates and prints emulsion side up on a clean, absorbent blotter.

Photo Albums: To air dry, place sheets of blotter covered with Hollytex between each leaf. Change the blotter paper as it becomes damp or wet. If the binding structure is no longer intact or the album can be dismantled, separate the leaves and air dry on clean blotters covered with Hollytex. Periodically turn from recto to verso to promote even drying. If drying cannot proceed immediately, wrap the volume in plastic and freeze. The volume can then be thawed and air dried later.

Keep the air moving at all times using fans. Direct fans into the air and away from the drying objects. Use dehumidifiers as needed to maintain humidity at or below 50%.

If air drying is not possible due to media solubility or unacceptable disruption to the structural integrity of the volume, freeze drying is recommended.

### **Record Albums (Vinyl, Shellac, and Acetate Discs)**

**Priority:** Dry within 48 hours. Freezing is untested; if there are no options, freeze at above 0 degrees F)

**Handling Precautions:** Hold discs by their edges. Avoid shocks.

**Packing Method:** Pack vertically in padded plastic crates.

<b>Supplies Needed:</b>	Padded Plastic Crates	Grease Pencil
Distilled Water	Blotting Material	
Kodak Photo Flo Solution		

**Preparation for Drying:** Remove the discs from their sleeves and jackets. If labels have been separated, mark the center of the discs with a grease pencil and keep track of the label.

Separate shellac, acetate, and vinyl discs. If dirt has been deposited on the discs, they must be washed in a 1% solution of Kodak Photo Flo in distilled water. Each disc media should be washed in its own container. Rinse each disc thoroughly with distilled water.

Jackets, sleeves, and labels may be air dried like other paper materials (see: “Paper: Uncoated” and “ Paper: Coated”).

Air dry discs vertically in a rack that allows for the free circulation of air. Dry slowly at ambient temperature away from direct heat and sources of dust

## **Scrapbooks**

**Priority:** Freeze immediately.

**Handling Precautions:** Do not move items until a place has been prepared for them. Large scrapbooks should be supported with boards.

<b>Supplies Needed:</b>	Bread Trays	Blotter Paper
Bookends/Bricks	Dehumidifier	Extension Cords
Freezer/Waxed Paper Fans		Masking Tape
Plywood sheets	Scissors	Polyethylene film
Plexiglass sheets	unused newsprint	Sponges
Polyester film	Silicon release paper	pliers
Screw driver	tin snips	milk crates
Moisture meter		

**Preparation for Drying:** If the scrapbook is not boxed and the binding is no longer intact, wrap in freezer paper. Freeze as quickly as possible, using a blast freezer if available.

If air drying, secure a clean, dry environment where the temperature and humidity are as low as possible.

**Drying Methods:** Vacuum freeze drying is the preferred method, although this should not be used for photographs. If the book is to be vacuum freeze-dried, the photographs should first be removed. Wrapped scrapbooks should be packed lying flat in shallow boxes or trays lined with freezer paper.

Air drying may be used for small quantities that are only damp or water-damaged around the edges. The books should not have large amounts of coated paper or soluble adhesives.

Pages should be interleaved with unused newsprint or blotter and the books placed on tables. The interleaving and page opening should be changed regularly and often to speed drying. If the binding has failed, it may be advisable to separate the pages and lay them out individually to dry. Care must be taken to maintain page order.

Keep the air moving at all times using fans. Direct fans into the air and away from the objects

## Vellum and Parchment Bindings & Documents

**Priority:** If the text block of a book is wet, priority should be placed on getting it dry over saving the binding, unless the binding has been assigned the higher priority by the curator. If the item has gotten wet, successful salvage will probably not be possible, so other high priority items should be treated first.

**Handling Precautions:** Do not move items until a place has been prepared to receive them.

**Supplies Needed:** Blotters Weights  
Hollytex

**Drying Procedures:** Drying must take place slowly and be carefully controlled. The item needs to be restrained as it dries for it to retain its shape.

Documents that have only been exposed to high humidity should be interleaved with dry blotters and placed under weights. Blotters should be checked after about a half hour to see if they need to be exchanged for drier ones.

For drying of slightly damp documents, the edges should be clipped and pinned or, at least, weighted. As the item dries it should be checked at least every 15 minutes and the tension adjusted as necessary. Once the item is almost dry, the clips and weights can be removed and the item should be placed between blotters and weighted overall to complete drying.

Vellum bindings need to be watched carefully. Blotters should be placed between the covers and the text and on the outside of the cover. The book should then be weighted or put in a press. As the binding dries it may shrink and cause damage to the text block, in which case it should be carefully removed before more damage is caused.

Non-vacuum freeze drying can be used as a last resort for drying vellum and parchments, but the limited experience with this procedure shows that there will be much distortion and change in the object. Vacuum freeze drying is to be avoided with vellum and parchment

## Textiles and Clothing

**Priority:** Dry archaeological textiles and textiles with bleeding dyes as quickly as possible. All other textiles within 48 hours to prevent mold growth.

**Handling Precautions:** Move textiles only after a place has been prepared to receive them. Handle wet textile objects only when necessary and as little as possible because textile materials are weaker when wet and can be easily damaged or torn. Be particularly careful with wet archaeological textiles, which can be extremely weakened by contact with water. It is important to support wet textile objects thoroughly when moving them, either on a solid support or in a

sling made from a length of fabric, because the added weight of the water increases the possibility of damage. Wet hanging costumes should be carried on a sling and not re-hung. Be sure that all identifying information such as accession number tags is retained with the objects, and label any parts that become detached. If it is possible to do so without excessive handling, remove all wet packing materials such as cardboard and tissue from contact with textiles. Do not unfold or spread out wet textiles at this time, and do not stack wet textiles on top of each other.

Textile objects often have associated non-textile materials such as metal and leather. See salvage instructions for those materials, keeping in mind that the textile component will probably be the most valuable.

**Preparation for Drying:** A large area is needed to dry wet textiles, as they cannot be placed on top of each other. Floor space can be used; if possible clean floors before using the space. Table and floor surfaces should be covered with clean polyethylene sheeting, and then with clean blotters or other absorbent material. Fans can be used to increase air circulation and speed drying; place them so the air flow goes across surface of the textiles for optimal drying.

**Supplies Needed:** Polyethylene sheeting Blotters/Paper towels Terry cloth toweling  
Sponges Cheesecloth  
Muslin or Boards for carrying

**Drying Procedure:** Quick drying is essential for best recovery of wet textile objects. Excess water can be removed from very wet textiles in good condition by gentle blotting with sponges. Absorbent materials such as blotters or terry cloth toweling should then be placed on top of the objects, removed when saturated, and replaced with dry ones. When the textiles have dried to an appreciable level, they can be gently handled to open out folds and expose new areas to the air. Costumes can be padded out slightly with acid-free tissue, polyester batting, or nylon tulle to speed drying and prevent creasing.

Textiles with bleeding dyes should be dried first and as quickly as possible. Use absorbent materials to remove as much water as possible. Concentrate drying activity on the areas that are bleeding so that they will dry before the surrounding areas. Hair dryers on low heat can be used for this spot drying. Cover the textile with cheesecloth and be sure the cheesecloth is in close contact with the textile. Leave the cheesecloth undisturbed until the textile is completely dry.

## Costume Accessories

**Priority:** Begin drying within 48 hours to prevent mold growth.

**Handling Precautions:** Support all accessories when moving them; use a solid support. Keep handling to a minimum as these complex objects can be greatly weakened by water.

**Preparation for Drying:** Prepare the room and surfaces for drying as for textiles and clothing.

<b>Supplies Needed:</b>	Polyethylene sheeting	Blotters/ Paper towels
	Cheesecloth	Sponges
	Terry cloth toweling	Muslin or boards for carrying

**Drying Procedure:** Do not attempt to open fans or parasols, and do not reshape hats while wet. Gently blot water from the objects with sponges, blotter, terry cloth toweling, or paper towels. As hats dry, they can be gently reshaped and padded with acid-free tissue or polyester batting for drying. Shoes and gloves should be treated as for leather historical objects; in general, gloves do not need to be padded out for drying. Fans and parasols should be dried as is; do not attempt to open or reshape them. If any of the objects have bleeding dyes, follow the procedure outlined under Textiles and Clothing.

### **Leather and Rawhide**

**Priority:** Begin drying within 48 hours to prevent mold growth. Leather with the condition known as “red rot” will be irreversibly stiffened and darkened by exposure to water if not treated quickly.

**Handling Precautions:** Wet leather may be fragile; leather with red rot or which is torn will require support to transport safely. Move items only after a place has been prepared to receive them.

**Packing Method:** Wrap items with freezer paper or plastic sheeting to prevent red-rotted leather from coming in contact with and soiling adjacent items and to keep it from drying before it can be treated. Support complex shaped objects with unused newsprint or other absorbent material.

<b>Supplies Needed:</b>	portable dehumidifier	freezer paper	Plastic sheeting
	pallet or lumber	sponges	paper towels
	clear water	Clean towels	Fans

**Preparation for Drying: Rinse** or sponge clear water to remove mud or dirt before drying. Be careful in rinsing red rotted or painted/gilded surfaces. Keep red rotted leather damp, if it is still in that condition, until proper consolidation can be done.

**Drying Procedure:** Some leather was intended to be flexible (e.g. much native tanned buckskin, harness leather, and some rawhide) and will need to be manipulated during drying in order to retain its flexibility. Other leather was either not intended to flex (e.g. shields, fire buckets) or no longer needs to be flexible and may be padded out and allowed to dry slowly.

Sponges, clean towels, paper towels, or unused newsprint may be used to absorb excess moisture. Pad out to correct shape using absorbent material and change padding as material becomes saturated.



Air dry using fans to keep air moving without blowing directly on the pieces. Raise items off the floor on trestles, pallets, lumber, or screens to allow air to circulate on all sides.

Use portable dehumidifiers to slowly remove moisture from the area and objects. Bring the relative humidity down to as close to 50% as is practical. Check daily for mold.

## Wood

**Priority:** Begin drying within 48 hours to prevent mold growth. Polychromed objects require immediate attention; notify a conservator.

**Handling Precautions:** Move items only after a place has been prepared to receive them. Lift from the bottom of an object: tabled from the apron; chairs by the seat rails not the arms, stretchers, slats, headpiece, or crest rails; trunks from the bottom, etc.

**Packing Method:** Partially wetted objects can be packed with dry blotting material such as unused newsprint or acid-free blotters to remove as much moisture as possible. Thoroughly wetted, unpainted objects should be wrapped with blotting materials, then wrapped in polyethylene sheeting to retain as much moisture as possible, since fast drying will cause irreversible damage.

### Supplies Needed:

soft bristle brushes	fans	Pallets or lumber
Sponges	clean towels	unused newsprint
Paper towels	Wooden spatula	polyethylene sheeting
portable dehumidifier		

**Preparation for Drying:** Rinse or sponge with clear water to remove mud and dirt before drying. Be careful not to wipe or scour, as grit will damage remaining finish. Use a soft bristle brush to clean carvings and crevices. If mud has dried, dampen with a sponge and remove with a wooden spatula; rinse. Remove wet contents and paper liners from drawers and shelves.

**Drying Procedure:** Absorb excess moisture with sponges, clean towels, paper towels, or unused newsprint. Blot; do not wipe, to avoid scratching surface.

Air dry, using fans to keep air moving without blowing directly on the pieces. Tent the objects with polyethylene sheeting to slow the drying. Raise items off the floor on trestles, pallets, or lumber to allow air to circulate on all sides. Open doors and drawers slightly to allow air to circulation inside items.

Use portable dehumidifiers to slowly remove moisture from the air and objects. Drying quickly will cause warping and cracking. Bring relative humidity down to 50-55%.

**Organics**  
**(Bone, Hair, Horn, Ivory, Shell)**

**Priority:** Begin drying within 48 hours to prevent mold growth.

**Handling Precautions:** Move items only after a place has been prepared to receive them.

**Packing Method:** Individually wrap or plastic bag items since these materials tend to split and fragment into small pieces when wet or damp.

**Supplies Needed:**

plastic sheeting or bags	clear water	Sponges
clean towels	paper towels	Unused newsprint
fans	portable dehumidifier	Pallets or lumber

**Preparation for Drying:** Rinse or sponge with clear water to remove mud or dirt before drying.

**Drying Procedure:** Sponges, clean towels, paper towels, or unused newsprint may be used to absorb excess moisture.

Slowly air dry using fans to keep air moving without blowing directly on the pieces. Raise items off the floor on trestles, pallets, or lumber to allow air to circulate underneath the objects.

Use portable dehumidifiers to slowly remove moisture from the area and objects. Bring relative humidity down to 50%.

**Inorganics**  
**(Ceramics, Glass, Metals, Stone)**

**(Priority:** These materials can be dealt with last since they generally will suffer little damage from short term exposure to water.

**Handling Precautions:** Move items only after a place has been prepared to receive them.

**Packing Method:** Varied with the fragility of the material; water/wetness has no bearing.

**Supplies Needed:**

Clear Water	Portable dehumidifier
Sponges	Paper Towels
Unused Newsprint	Pallet or Lumber
Heater or hair dryer	

**Preparation for Drying:** Rinse or sponge with clear water to remove mud or dirt before drying.

**Drying Procedure:** Sponges, clean towels, paper towels, or unused newsprint may be used to absorb excess moisture. Exchange wet for dry blotting material at least once daily until items are dry. Check daily for mold growth.

Air dry, using fans to keep air moving without blowing directly on the pieces. Raise items off the floor using trestles, pallets, or lumber to allow air to circulate underneath the items.

Metal objects can be dried with moderate heat (60-90 F) in an oven or using a heater or hair dryer.

Use portable dehumidifiers to slowly remove moisture from the area and objects. Bring the relative humidity down to 50%

## **Rehabilitation – Water Damage**

**Storage Areas:** After the collections have been removed, check the shelves and repair them if necessary. If mold growth has occurred, sterilize the shelves.

Monitor the environment and inspect the area for mold. Do not return collections until conditions have stabilized.

**Collections:** Items that have dried in low relative humidity conditions need to acclimatize to the usual storage conditions. When the collections return, uncover them and let them equilibrate to the moisture content of the area; this could take up to two weeks. Inspect items to insure they are indeed dry (less than 7% moisture content), and monitor daily for mold. In an ideal situation, collections should be kept in a separate rehabilitation area for 6 months. If this is not possible, monitor the collections closely for mold and humidity damage.

## **Fire & Smoke Damage General Guidelines**

Wet artifacts should be treated before those suffering fire and smoke damage. **Contact a conservator** as soon as possible to plan cleaning and treatment. The following steps should be taken in preparation for treating smoke and fire damaged objects:

- 1) Contact a conservator as soon as possible and try to arrange for a site visit.
- 2) Try to avoid touching charred items until ready to clean.
- 3) Always wear latex gloves when handling sooty items.

Wait for assistance from trained conservation or disaster recovery staff before attempting to rehabilitate artifacts.

## APPENDIX 11

### Safety Equipment Procedures Checklist

The staff member assigned in conjunction with early warning preparations during severe weather will complete this checklist. A completed copy will be delivered to the Dean.

#### Two Emergency Canister – 2 person

Yes	No	
___	___	1. Flashlight with extra batteries
___	___	2. 12-hour light sticks
___	___	3. Waterproof tarp
___	___	4. Plastic sheeting
___	___	5. Duct tape
___	___	6. Utility knife
___	___	7. Roll of caution tape
___	___	8. Mop
___	___	9. Sponges
___	___	10. Paper towels
___	___	11. Triage tags
___	___	12. China marker, pencils.
___	___	13. Notebook and an emergency instruction sheet in a waterproof document pouch

#### One Emergency Response Kit – 25 person

Yes	No	
___	___	1. 1 pair leather palmed work gloves
___	___	2. 1 pair safety goggles
___	___	3. Pry bar
___	___	4. 1 multifunction tool
___	___	5. 25 dust masks
___	___	6. 1 first aid kit
___	___	7. 6 pairs latex gloves
___	___	8. 1 (8'X10') tarp
___	___	9. 3 emergency thermal blankets
___	___	10. 2 rolls duct tape
___	___	11. 1 roll plastic sheeting
___	___	12. 1 whistle and lanyard
___	___	13. 1 emergency AM radio (2 battery sets)
___	___	14. 1 flashlight (2 battery sets)
___	___	15. 25 emergency water pouches (4 oz each)
___	___	16. 1 water bag (2 gallon)
___	___	17. 1 toilet bucket (5 gallon)

- \_\_\_ \_\_\_ 18. 1 Snap-on toilet seat
- \_\_\_ \_\_\_ 19. 12 biohazard bags
- \_\_\_ \_\_\_ 20. 12 toilet deodorizer packets
- \_\_\_ \_\_\_ 21. 1 roll toilet paper
- \_\_\_ \_\_\_ 22. 100 moist towelettes
- \_\_\_ \_\_\_ 23. 1 emergency instructions sheet
- \_\_\_ \_\_\_ 24. 1 waterproof document pouch
- \_\_\_ \_\_\_ 25. 1 writing pad
- \_\_\_ \_\_\_ 26. 2 pens

**Three React Pak x 2**

- | <b>Yes</b> | <b>No</b> |   |
|------------|-----------|---|
| ___        | ___       | 1. 8 disposable aprons  |
| ___        | ___       | 2. 8 pair disposable vinyl gloves   |
| ___        | ___       | 3. 2 pair slip-on stretchable boots with skid resistant soles                     |
| ___        | ___       | 4. 2 dust masks, Niosh/MSHA approved for protection against dust and mists<br>for |
| ___        | ___       | 5. clean-up<br>Paper towels   |
| ___        | ___       | 6. 2 large cellulose sponges  |
| ___        | ___       | 7. Cotton desk mop and handle   |
| ___        | ___       | 8. Mop bucket   |
| ___        | ___       | 9. 2 extra heavy duty trash bags  |

**Complete tool kit**

- | <b>Yes</b> | <b>No</b> |                        |
|------------|-----------|------------------------|
| ___        | ___       | 1. Hammer              |
| ___        | ___       | 2. Screwdrivers        |
| ___        | ___       | 3. Box knife           |
| ___        | ___       | 4. Asst. nuts, bolts   |
| ___        | ___       | 5. Asst. nails, screws |
| ___        | ___       | 6. File                |
| ___        | ___       | 7. 3 in 1 Oil          |
| ___        | ___       | 8. Wrenches            |
| ___        | ___       | 9. Crescent wrench     |
| ___        | ___       | 10. Pliers             |
| ___        | ___       | 11. Channel locks      |
| ___        | ___       | 12. Drills and bits    |
| ___        | ___       | 13. Duct Tape          |

**Miscellaneous**

<b>Yes</b>	<b>No</b>	
___	___	1. Freezer Paper
___	___	2. 10 Gal. Drinking Water
___	___	3. Dolly
___	___	4. Paper Towels
___	___	5. Newspaper rolls
___	___	6. 100' rope
___	___	7. Cart
___	___	8. Ladder
___	___	9. Plastic Clothes Pins
___	___	10. Clothesline
___	___	11. Plastic Trash Bags
___	___	12. Emergency Lighting
___	___	13. Water Proof Boxes
___	___	14. Water Dam Sleeves
___	___	15. Emergency Weather Radio
___	___	16. Collections Vacuum
___	___	17. Industrial Blower
___	___	18. Caution Tape

**Seven Car Kits**

<b>Yes</b>	<b>No</b>	
___	___	1. Id Badges
___	___	2. Disaster Plan
___	___	3. Water Proof Binder
___	___	4. Paper
___	___	5. Pens/Pencils
___	___	6. Hard Hat
___	___	7. Vest
___	___	8. Small First Aid Kit
___	___	9. Flash Light
___	___	10. Camera
___	___	11. Disaster Wheel
___	___	12. Clipboard
___	___	13. Marker
___	___	14. Post-it Notes
___	___	15. Two-Way Radio

Report completed by: \_\_\_\_\_

Date: \_\_\_\_\_

## **APPENDIX 12**

### **Vendor Contracts and Memorandum of Agreements**

## **APPENDIX 13**

### **FEMA Guidelines Booklet**



## **APPENDIX 14**

### **Emergency Response and Salvage Wheel**

**APPENDIX 15**

**Texas Heritage Museum Disaster Car Kits Check Out Form**

<b>Name</b>	<b>Check out Date</b>	<b>Check in Date</b>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____