Chapter 10: Emergency Planning

NPS Museum Emergency Planning Overview

NPS Museum Emergency Planning and Preparedness Standards

Develop, approve, keep current, and implement a Museum Collections Emergency Operations Plan (MCEOP) as part of the park Emergency Operations Plan in accordance with Director's Order (DO) 24.4.3.10: Emergency Operation, that addresses museum collection requirements for emergency protection, response, relocation, and salvage. Review the MCEOP annually and update every five years.

Develop Emergency Response Steps for different emergency incidents in the MCEOP.

Implement the NPS Checklist for Preservation and Protection of Museum Collections to identify and document hazards to and vulnerabilities of museum collections and structures and spaces housing collections in accordance with DO 24.4.3.21: Checklist. Review and submit to the National Catalog annually in accordance with DO 24.5.2: Checklist.

Develop a Museum Mitigation Action Plan that includes corrective actions to be implemented to remove or reduce hazards and vulnerabilities identified in risk assessments. Review annually and update every five years.

Mitigate hazards and vulnerabilities identified in the Museum Mitigation Action Plan ***or*** relocate objects at risk to a designated secure and stable location.

Risk Assessment

Complete the NPS Checklist for Preservation and Protection of Museum Collections annually. Complete the Object Assessment, Risk Assessment Worksheet, and other risk assessments.

Museum Mitigation Action Plan

Develop a Museum Mitigation Action Plan that includes corrective actions to be implemented to remove or reduce hazards and vulnerabilities in structures and spaces housing collections. Review annually and update every five years.

Mitigating Hazards and Vulnerabilities

Implement corrective actions identified in the Museum Mitigation Action Plan to remove or reduce identified hazards and vulnerabilities in collaboration with the facility manager, emergency operations coordinator, and interdisciplinary team.

Museum Collections Emergency Operations Plan

Develop and implement a Museum Collections Emergency Operations Plan (MCEOP) as part of the park Emergency Operations Plan. Review the MCEOP annually and update every five years.

The MCEOP includes sections on: Museum Emergency Planning Standards and Policies; Incident Command System (ICS); Collections and Structures Housing Collections Overview; Risk Assessment; MCEOP Team Responsibilities; First Priorities for Relocation and Salvage; Emergency Response, including Emergency Response Steps; Security; Emergency Contact Information; Emergency Equipment, Services, and Supplies; Salvage Procedures; Post-Emergency Critique; MCEOP Update and Review; and Figures and Floor Plans.

Museum Emergency Response Steps

Implement Emergency Response Steps for different types of emergency incidents, including:

Active Shooter; Disruptive Individual; Earthquake; Explosion; Fire; Hazardous Materials Spill, Odor, and Gas Leak; Medical Emergency; Mold Outbreak; Power Outage; Severe Weather; Suspicious Package or Item; Suspicious Person and Vandalism; Threat (Threatening Call or Bomb Threat); Volcanic Eruption; and Water Leak and Flood.

Follow Incident Command System (ICS) procedures when activated.

Relocation and Salvage

Identify First Priorities for Relocation and Salvage before an emergency incident using the First Priority Criteria for Object Relocation and Salvage (Figure 10.20) and Object Assessment (Figure 9.3).

Implement relocation and salvage procedures within the first 48 – 72 hours after an emergency incident.

Training and Documentation

Conduct annual emergency training and response exercises for museum staff, including ICS training, in collaboration with the emergency operations coordinator.

Document all museum emergency planning and preparedness activities.

Complete a Post-Emergency Critique (Figure 10.26) within a month of the emergency incident.

CHAPTER 10: EMERGENCY PLANNING

A. Overview

Emergencies pose a threat to life safety, museum collections, and structures housing collections. They may be large- or small-scale and occur due to natural or human causes. Emergencies may occur as a single incident or as a complex of two or more, with or without warning.

Emergency planning includes risk assessment, removal or reduction of hazards and vulnerabilities, and implementation of emergency operations plans, Emergency Response Steps, and salvage procedures. When planning and preparing for museum emergencies, consider what impact the loss of or damage to the collection and structures housing collections would have on the park mission and programs.

Take corrective actions to mitigate identified hazards and vulnerabilities ***before*** an emergency incident occurs. Pre-incident actions ensure response and salvage activities taken ***during*** and ***after*** an emergency incident are implemented without confusion, delay, and unnecessary loss or damage.

A.1. What is included in this chapter?

This chapter covers museum emergency planning and preparedness for collections and structures housing collections. It includes (in order of appearance in the chapter):

- *National Park Service (NPS) Museum Emergency Planning and Preparedness Standards*
  Section B: DOI and NPS Emergency Planning Policies and Standards
- *Risk assessments* to identify hazards and vulnerabilities
  Section C: Risk Assessment, Appendix F Figure F.2: NPS Checklist for Preservation and Protection of Museum Collections, and Figure 10.2: Risk Assessment Worksheet
- *Museum Mitigation Action Plan* including corrective actions to remove or reduce identified hazards and vulnerabilities
  Section D: Museum Mitigation Action Plan and Figure 10.3: Museum Mitigation Action Plan (Sample)
- *Mitigation of hazards and vulnerabilities* through implementation of the Museum Mitigation Action Plan
  Section E: Mitigating Hazards and Vulnerabilities
- *Museum Collections Emergency Operations Plan* (MCEOP) appended to the park Emergency Operations Plan (EOP)
  Section F: Museum Collections Emergency Operations Plan and Figure 10.4: Museum Collections Emergency Operations Plan (Sample)
- *Emergency Response Steps* for different emergency incidents
  Section G: Museum Emergency Response and Figures 10.5 – 10.19: Emergency Response Steps
- *Determination of object relocation and salvage priorities* using the *First Priority Criteria for Object Relocation and Salvage*
  Section H: Relocating Museum Objects, Figure 10.20: First Priority Criteria for Object Relocation and Salvage, and Figure 9.3: Object Assessment

- *Salvage procedures* for affected objects
  Section I: Salvaging Museum Objects and Figure 10.24: Salvage Procedures
- *Training and documentation* for museum emergency planning and preparedness
  Section J: Training and Documentation
- *Figures and templates* for customization by parks, including MCEOP, Emergency Response Steps, and emergency contact and supply and equipment lists
  Figure 10.21: Emergency Contact List (Sample), Figure 10.22: Emergency Vendor and Sources of Assistance List (Sample), and Figure 10.23: Emergency Supplies and Equipment (Sample)

The Museum Emergency Planning Cycle (Figure 10.1) provides a visual representation of the ongoing museum emergency planning and preparedness process.

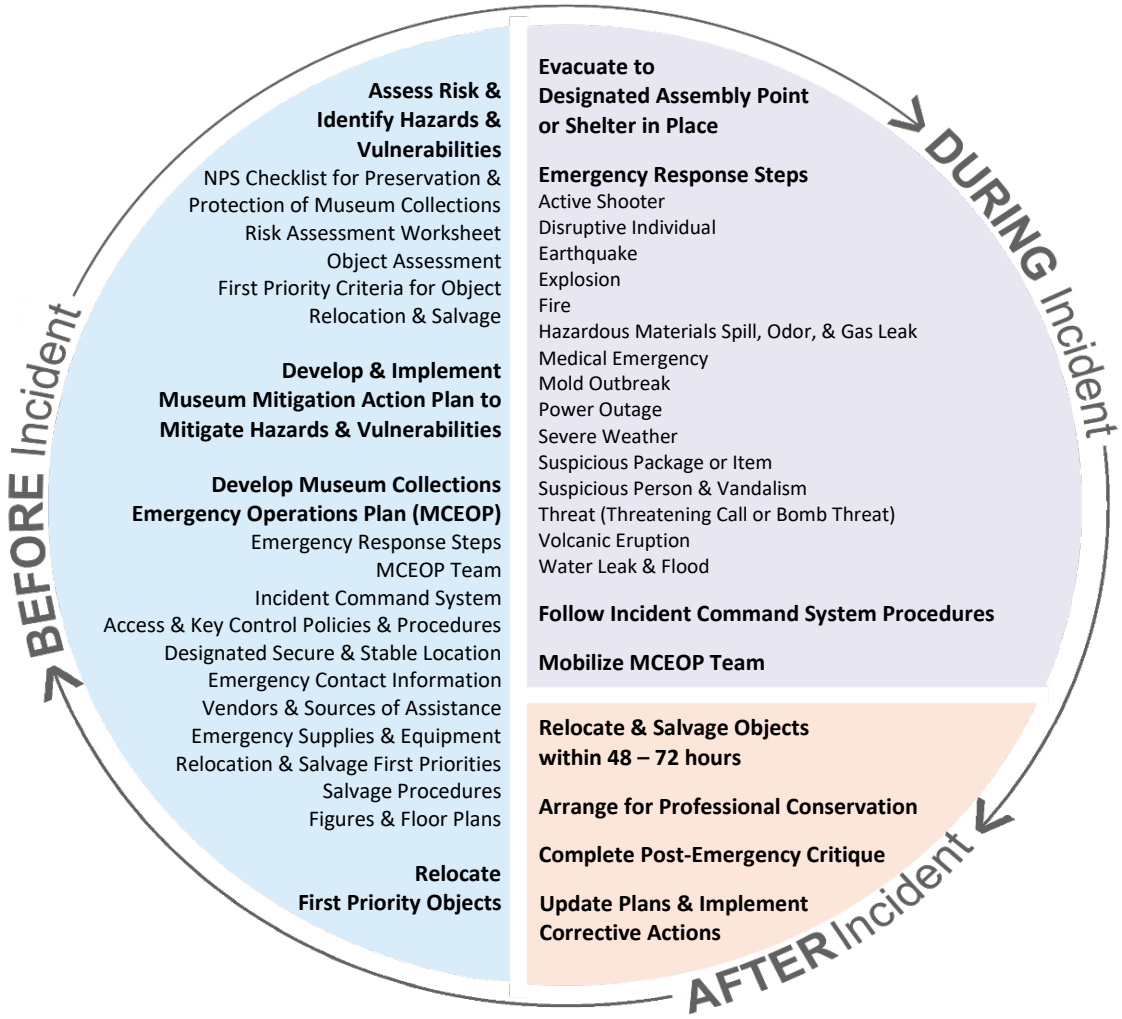


Figure 10.1. Museum Emergency Planning Cycle

This chapter does not address emergency planning and preparedness for laboratories or wildland fires.

A.2. What kinds of emergency incidents are addressed in this chapter?

Emergency incidents that impact collections, structures housing collections, and/or life safety include (in alphabetical order):

- Active shooter
- Disruptive individual
- Earthquake
- Explosion
- Fire
- Hazardous materials spill, odor, and gas leak
- Medical emergency
- Mold outbreak
- Power outage
- Severe weather
- Suspicious package or item
- Suspicious person and vandalism
- Threat (threatening call or bomb threat)
- Volcanic eruption
- Water leak and flood

See Section E: Mitigating Hazards and Vulnerabilities and Figures 10.5 – 10.19: Emergency Response Steps. See also Chapter 5: Biological Infestations, Chapter 9: Museum Fire Protection, Chapter 11: Curatorial Health and Safety, and Chapter 14: Museum Security.

A.3. Who is responsible for museum emergency planning?

The ***superintendent*** has overall responsibility for preserving and protecting the park's museum collection. The ***curator,*** as designated custodial officer, is responsible for preserving and protecting the museum collection, including museum emergency planning and preparedness. In this chapter, "curator" refers to the park curator or collateral duty staff designated as responsible for the collection.

The curator is responsible for developing and completing:

- Risk assessments including:
  - NPS Checklist for Preservation and Protection of Museum Collections (Appendix F, Figure F.2)
  - Risk Assessment Worksheet (Figure 10.2)
- Museum Mitigation Action Plan (Figure 10.3).
- Museum Collections Emergency Operations Plan (MCEOP) (Figure 10.4), in collaboration with the emergency operations coordinator and facility manager.
- Prioritization of objects for relocation and salvage using the First

Priority Criteria for Object Relocation and Salvage (Figure 10.20).

- Object Assessment (Figure 9.3).

The curator collaborates with the:

- Emergency operations coordinator to coordinate museum emergency response and salvage activities and training.
- Facility manager to develop and implement the Museum Mitigation Action Plan.

A.4. What are the emergency operations coordinator's responsibilities for emergency planning?

The superintendent is responsible for park-wide emergency planning and preparedness. The superintendent may delegate responsibilities for emergency operations coordination to the chief ranger, park safety officer, facility manager, or other staff as appropriate. This delegation is made in writing and filed in the park central files and/or Superintendent's Orders.

The ***emergency operations coordinator*** will:

- Develop and maintain park emergency planning documents, including the park Emergency Operations Plan (EOP), and coordinate park-wide emergency planning and response.
- Append the MCEOP to the park EOP, in collaboration with the curator.
- Develop and implement emergency response and situational awareness training for park employees.
- Arrange for a Physical Security Assessment for each structure housing collections, in collaboration with park security and the curator.

A.5. What are the facility manager's responsibilities for museum emergency planning?

The ***facility manager*** works with the curator and emergency operations coordinator to:

- Ensure regular inspection, testing, and maintenance of the structure and building envelope, utilities, equipment, and systems in structures and spaces housing collections in accordance with nationally-recognized codes, manufacturer's specifications, and NPS policies and guidance.
- Complete a comprehensive condition assessment of the building envelope, utilities, equipment, and systems for structures housing collections.
- Generate information on:
  - availability of physical resources such as power and water
  - existing utilities and mechanical systems and controls in spaces housing collections
  - funding needed to install, upgrade, and replace equipment and systems

- Implement corrective actions in the Museum Mitigation Action Plan in collaboration with the curator and other specialists.

- Recommend and install equipment, utilities, and structural components in structures housing collections, including water, HVAC systems, power, and lighting.

- Develop work orders using the Facility Management Software System (FMSS), Project Management Information System (PMIS) statements, and Scopes of Work for structures and spaces housing collections, in collaboration with the curator.

- Coordinate new construction and renovation of structures and spaces housing collections.

- Coordinate landscaping adjacent to structures housing collections.

See Section D.3: Mitigation funding. See also the NPS Denver Service Center Design and Construction Division website.

A.6. What is the interdisciplinary team's role in museum emergency planning?

The ***interdisciplinary team***, coordinated by the curator, participates in planning and preparedness for museum emergencies. The team should include the emergency operations coordinator, facility manager, safety officer, Park Structural Fire Coordinator (PSFC), Regional Structural Fire Manager (RSFM) or Authority Having Jurisdiction (AHJ), chief ranger, chief of cultural and/or natural resources, and regional curator. Include the historical architect advisor, cultural landscape specialist, conservator, and other specialists as needed. The team should meet regularly to discuss emergency planning and mitigation projects.

A.7. What is the Incident Command System (ICS)?

The ***Incident Command System*** (ICS) is a uniform, scalable command structure that can be activated to address park-wide emergency incidents. It is also used for planned events.

NPS emergency operations are conducted using ICS as part of the National Incident Management System (NIMS). The Unified Command System is used when other agencies are involved. Under ICS, the Incident Commander (IC) has overall responsibility for managing the emergency incident. Once ICS is activated, park emergency response actions, including actions for the museum program, fall under the IC's authority.

The curator should:

- Ensure that collections and structures housing collections are addressed in park ICS planning documents, including the Continuity of Operations Plan (COOP).

- Liaise with the ICS Operations Section Chief and participate in planning meetings to represent collections needs and coordinate actions that impact collections and structures housing collections.

- Arrange for ICS training for all museum staff.

In the event that wildland fire impacts collections and structures housing collections, work with the IC and/or park Fire Management Officer to implement the steps outlined in the MCEOP.

See Section J.1: What training is needed? See also DO 55: Incident Management Program: 5.3: Incident and Event Management, Reference Manual 55: Incident Management Program: 4.1: National Program Management: Department of the Interior and 4.5: Chain of Command, *Management Policies (2006)* 8.2.5.2: Emergency Preparedness and Emergency Operations, and the Federal Emergency Management Agency (FEMA) National Incident Management System (NIMS) website.

A.8. What terms are used in this chapter?

In this chapter:

- *Collections* refer to museum objects, specimens, archival items, paper and associated electronic museum records, and collection images.
- *Designated secure and stable location* refers to a structure or space designated in advance with physical security, including access and key control policies and procedures, appropriate stable relative humidity (RH) and temperature, and exclusion of ultraviolet radiation (UV).
- *Emergency planning* includes planning, preparedness, mitigation, response, and salvage before, during, and after emergency incidents.
- *First Priority Criteria for Relocation and Salvage* are used to determine "First Priority" objects to be relocated and/or salvaged due to emergency incidents.
- *Hazards* or *Threats* are natural or human-caused occurrences or variables that can negatively impact life safety, collections, and structures housing collections.
- *Housing* refers to storing and/or exhibiting collections.
- *Incidents* are unplanned, and *Events* are planned activities. Incidents may also be referred to as "emergencies" or "disasters."
- *Risk* refers to the combination of hazards and vulnerabilities facing collections and structures housing collections.
- *Structures housing collections* include museums, collection storage facilities, centers, furnished historic structures, galleries, visitor centers, spaces within buildings, and administrative offices housing collections.
- *Vulnerabilities* refer to the susceptibility to damage of collections and structures housing collections.

See Section M: Glossary and Section N: Abbreviations. See also DOI Departmental Manual 900 DM 4: Coordination of Emergency Incidents.

B. DOI and NPS Museum Emergency Planning Policies and Standards

Department of the Interior (DOI) and NPS policies and standards below apply to collections housed in NPS and non-NPS structures and repositories.

B.1. DOI Departmental Manuals

411 DM 1: Identifying and Managing Museum Property
1.11.B.3: Emergency Management Plan (EMP): "… identifies risks and vulnerabilities to museum property from events such as fires, earthquakes, floods, tornadoes, or civil disturbances. The EMP pertains to each bureau/ office facility and non-bureau facility housing museum property. The EMP must be reviewed every 5 years and updated, if necessary."

900 DM 1: Emergency Management Program
1.3.A: Policy: "All Bureaus/Offices must provide necessary resources to prevent, protect against, mitigate the effects of, respond to, and recover from an incident; declared Emergency and/or Major Disaster…"

900 DM 2: Continuity of Operations (COOP) Program
2.5: Policy: "…[U]nits will have in place a comprehensive and effective COOP program to ensure continuity of essential Federal functions …"

See also 112 DM 18: Office of Emergency Management, 900 DM 3: National Security Emergency Preparedness (NSEP), 900 DM 4: Coordination of Emergency Incidents, and 905 DM 1: Policy, Functions, and Responsibilities.

B.2. NPS Museum Emergency Planning and Preparedness Standards

Implement the following museum emergency planning and preparedness standards for collections and structures and spaces housing collections:

1. Develop, approve, keep current, and implement a Museum Collections Emergency Operations Plan (MCEOP) as part of the park Emergency Operations Plan in accordance with Director's Order (DO) 24.4.3.10: Emergency Operation, that addresses museum collection requirements for emergency protection, response, relocation, and salvage. Review the MCEOP annually and update every five years.

2. Develop Emergency Response Steps for different emergency incidents in the MCEOP.

3. Complete the NPS Checklist for Preservation and Protection of Museum Collections to identify and document hazards to and vulnerabilities of museum collections and structures and spaces housing collections in accordance with DO 24.4.3.21: Checklist. Review and submit to the National Catalog annually in accordance with DO 24.5.2: Checklist.

4. Develop a Museum Mitigation Action Plan that includes corrective actions to be implemented to remove or reduce hazards and vulnerabilities identified in risk assessments. Review annually and update every five years.

5. Mitigate hazards and vulnerabilities identified in the Museum Mitigation Action Plan ***or*** relocate objects at risk to a designated secure and stable location.

B.3. NPS emergency planning policies

NPS Management Policies 5.3.1.1: Emergency Management: "Measures to protect or rescue cultural resources in the event of an emergency, disaster, or fire will be developed as part of a park's emergency operations and fire management planning processes."

NPS-28: Cultural Resource Management Guideline 9.D: Standards: "Each park and center has identified threats to … its museum collection and has taken appropriate measures to deal with them, including emergency planning."

Director's Order 24: NPS Museum Collections Management 4.3.10: Emergency Operation: "Park superintendents, center managers, and others who manage collections (with the assistance of museum management staff) have the following responsibilities:…Approve, keep current, and implement a Museum Collections Emergency Operations Plan, as part of the park's Emergency Operations Plan and consistent with the National Incident Management System, identifying museum collection vulnerabilities to events (such as fire, earthquakes, and floods) and responses that will protect resources without endangering human health and safety. Ensure that staff trains, practices, and prepares for emergency response."

See NPS Management Policies 8.2.5.2: Emergency Preparedness and Emergency Operations, RM-55: Incident Management Program Chapter 4.1: National Program Management, DO 58: Structural Fire Management, NPS Reference Manual 77 Chapter 4: Emergency Management, NPS Environmental Safeguards Plan for All-Hazards Emergencies, NPS Division of Law Enforcement, Security, and Emergency Services (LESES) website, RM-9: Law Enforcement Chapter 26: Physical Security and CCTV, NPS Emergency Services Branch website, DOI Office of Emergency Management Resource website and sample emergency management plan.

C. Risk Assessment

Risk assessment identifies possible ways losses can occur by evaluating the severity of an emergency incident, probability of occurrence, and exposure to hazards in structures and spaces housing collections. The two most common risks to museums are fire and water.

C.1. What is risk assessment?

Risk assessment involves the:

- Identification of ***hazards*** and ***vulnerabilities*** based on:
  - natural factors (earthquake, severe weather)
  - geological, geographic, and climatic factors (location within a floodplain or Wildland-Urban Interface)
  - human factors (construction, hot work, uncorrected deficiencies)
  - frequency of park, local, and region-wide emergency incidents
- Identification of how likely each ***structure*** housing collections is to sustain damage during and after an emergency incident due to:

  - nature and/or condition of the structure and building envelope (unstable foundation, leaks, or cracks)
  - regular maintenance of the building envelope, systems, and utilities
  - presence or absence of automatic fire detection and alarm systems and automatic fire sprinkler and/or suppression systems

- Evaluation of the likelihood of damage to the ***collection*** due to:

  - how objects are stored or exhibited
  - ease with which objects can be relocated to a designated secure and stable location
  - object composition and condition
  - condition and nature of storage furniture and cabinetry
  - maintenance of the building and equipment

- Assessment of potential damage from emergency incidents that may manifest subsequently (cracks or structural damage).

See Figure 10.2: Risk Assessment Worksheet and Appendix F, Figure F.2: NPS Checklist for Preservation and Protection of Museum Collections. See also DOI Risks to Museum Collections - A Tool for Self-assessment.

C.2. What risk assessments are used to identify hazards and vulnerabilities?

Use the risk assessments listed below to identify hazards and vulnerabilities for inclusion in the Museum Mitigation Action Plan. Evaluate the collection and all structures and spaces housing collections, including storage, exhibit, and work spaces, as well as outdoor exhibits. If there are multiple structures, determine and document which structures face greater hazards than others.

- ***NPS Checklist for Preservation and Protection of Museum Collections*** (Appendix F, Figure F.2), referred to as ***Checklist*** in this chapter, is a self-assessment that must be completed by the curator and submitted to the National Catalog annually in accordance with DO 24.5.2: Checklist.

- ***Risk Assessment Worksheet*** (Figure 10.2), is a self-assessment completed by the curator. It should be reviewed annually and updated every five years. This is a fillable worksheet.

- ***Object Assessment*** (Figure 9.3) should be completed by the curator to support the decision to relocate individual First Priority objects to a designated secure and stable location. It should be used with the Museum Collections Assessment Matrix in RM-58 Chapter 7, Appendix A: Structural Fire Protection of Cultural Resources in the National Park Service (NPS).

- ***Physical Security Assessment*** for structures housing collections must be conducted by the Physical Security Coordinator every three to five years, depending on the Facility Security Level (FSL) of each structure. It should be conducted with the curator to identify security hazards and vulnerabilities, recommend corrective actions, and determine the FSL of each structure housing collections. See Chapter 14: Museum Security and the NPS LESES Physical Security website.

- ***Risk assessments conducted by specialists*** in engineering, museum fire protection, architecture, collections management, and other areas. For the Fire Protection Condition Assessment (FPCA), see Chapter 9, Section C:3: What is the Fire Protection Condition Assessment?

D. Museum Mitigation Action Plan

D.1. Museum Mitigation Action Plan overview

The Museum Mitigation Action Plan lists corrective actions to remove or reduce identified hazards and vulnerabilities in structures housing collections, utilities and systems, and operational procedures. Corrective actions are generated from the Checklist, Risk Assessment Worksheet, Object Assessment, Physical Security Assessment, comprehensive condition assessment, and risk assessments conducted by specialists.

A Sample Museum Mitigation Action Plan (Blank and Completed) is provided in Figures 10.3 and 10.3a.

The curator develops the Museum Mitigation Action Plan in collaboration with the emergency operations coordinator, facility manager, safety officer, PSFC, AHJ or RSFM, regional curator, interdisciplinary team, and appropriate specialists. The Museum Mitigation Action Plan must be reviewed annually, and updated every five years in accordance with NPS Museum Emergency Planning and Preparedness Standard (4) (MH-I 10.B.2.4). It should also be reviewed and updated after a major emergency incident, addition of a new or renovated structure or space to house collections, new exhibit installation, or change in the curator.

The Museum Mitigation Action Plan is only effective when implemented.

The Museum Mitigation Action Plan lists:

- Mitigation category.
- FMSS Location (number) and Location Description.
- Date listed.
- Corrective actions to be completed.
- Mitigation priority (immediate, intermediate, or long-term).
- Work order or PMIS number.
- Individual(s) responsible for completing corrective action.
- Date completed.

D.2. Decision not to implement corrective actions

The decision ***not*** to implement corrective actions identified in the Museum Mitigation Action Plan should be made in consultation with the curator, facility manager, emergency operations coordinator, regional curator, and interdisciplinary team, using the Object Assessment (Figure 9.3). The curator documents this decision using the Record of the Decision Not to Implement Corrective Actions in a Structure Housing Collections (Figure 10.3b). This is a fillable form.

D.3. Mitigation funding

The curator works with the facility manager, emergency operations coordinator, Contracting Officer's Representative (COR), regional curator, and regional fee and business office to obtain funding for mitigation projects. Sources of funding include cyclic maintenance, equipment replacement, repair and rehabilitation (RERE), recreation fee program, and other sources.

Corrective actions identified in the Museum Mitigation Action Plan and comprehensive condition assessment of the structure and systems are used to generate work orders using FMSS. Work orders are entered into PMIS to obtain funding for projects and develop Scopes of Work to mitigate hazards and vulnerabilities. Work with the facility manager and PSFC to ensure that location and condition information in FMSS for structures housing collections is up-to-date and accurate.

D.4. Arranging services in advance of an emergency incident

The curator works with the emergency operations coordinator, facility manager, PSFC, and park administration to establish the following in advance of an emergency incident:

- Agreements (formal or informal) or Memoranda of Understanding (MOUs) with local emergency and fire services, including:
  - commitment to respond to emergency incidents in spaces housing collections
  - scheduling tours of spaces housing collections
  - identification of hazardous collections and non-collection materials
- Collaborative or contractual relationships with:
  - conservation laboratories
  - designated secure and stable location(s) to temporarily house relocated objects
  - institutions (museums, archives, etc.) that can provide assistance after an emergency incident
  - facilities with commercial-grade freezers, including those outside the impacted area
- Arrangements with contractors and vendors, including vehicles, freezer trucks and supplies to relocate objects, Indefinite Delivery Indefinite Quantity (IDIQ) contracts for emergency services, and Blanket Purchase Agreements (BPA) for emergency supplies.

The regional office may establish mutual support arrangements with other parks and federal, state, regional, and county emergency entities.

See Figure 10.22: Emergency Vendor and Sources of Assistance List (Sample) and Chapter 9, Section D.4: What special considerations should be addressed with the local fire department?

D.5. Planning for a secure salvage area

The curator, as designated by the superintendent, is responsible for implementing written museum access and key control policies and procedures for collections on exhibit, in storage, and temporarily housed in salvage areas.

The curator must establish secure access and key control procedures for the salvage area, including a daily sign-in log and locking doors.

See Section I.2: Access to the Salvage Area, Figure 10.24: Salvage Procedures, and Chapter 14: Museum Security.

D.6. Planning for rapid emergency entry to collections

During an emergency incident, first responders may need access to secured structures and spaces housing collections. The curator should develop rapid entry procedures for access to collections during an emergency incident in consultation with the emergency operations coordinator, interdisciplinary team, and local fire department or first responders.

Many fire departments use emergency access key box systems (such as Knox-Box® or SupraSafe™) that use a master key for all key boxes in their jurisdiction. The curator ***must*** ensure that the local fire department's access and key control policies and procedures are sufficient to maintain museum security. Implement the rapid entry system ***in addition to,*** not as a substitute for, museum security systems and procedures.

The emergency access key box should have electronic tamper switches that are connected to the intrusion detection system(s) and monitored by closed-circuit television 24/7. The intrusion detection system(s) should detect and notify the receiving and monitoring station or central station and the curator of unauthorized attempts to enter spaces housing collections.

See Chapter 9, Section H.2: Planning for rapid entry to structures housing collections during a fire and Chapter 14: Museum Security.

D.7. Protecting the accession (and deaccession) book and folders

The accession book and folders and (optional) deaccession book and folders must be housed in a secure room above grade in a locked and insulated UL listed fire-resistive filing cabinet or vault when not in use, in accordance with NPS Museum Fire Protection Standard (7) (MH-I 9.B.1.7). The accession (and deaccession) book is ***always*** considered First Priority for relocation in the event of an emergency.

For paper records, house in an insulated filing cabinet, safe, or vault with a UL listing of (350°F one-hour). For electronic museum records, backups, and media files, house in an insulated media safe or box with a UL listing of (125°F one-hour). ***Do not*** house the accession (and deaccession) book and documents in basements or attics.

D.8. Completing regular backups and scans

The curator should establish and implement a schedule to regularly back up Interior Collections Management System (ICMS) data, and back up digital object images. Make museum-quality photocopies and digital scans of the accession (and deaccession) book and documents. Secure copies and scans in the curatorial office, superintendent's office, with the regional curator, and off-site.

D.9. Object location and inventory information

To facilitate access and security and aid in object recovery in the event of theft or loss, complete the annual inventory and arrange for photography of objects, including catalog numbers. Maintain current object location for

objects in storage, on exhibit, and on loan. Complete the annual inventory in accordance with MH-II, *Museum Records*, Chapter 4: Inventory and Other Special Instructions. Attach object images to Museum Catalog Records in ICMS.

E. Mitigating Hazards and Vulnerabilities

Mitigation includes corrective actions and/or operational procedures implemented to remove or reduce hazards and vulnerabilities. Implement corrective actions listed in the Museum Mitigation Action Plan ***prior*** to an emergency incident, in collaboration with the facility manager, emergency operations coordinator, and interdisciplinary team.

Implement general mitigation actions together with those for specific emergency incidents.

E.1. Mitigation for objects in storage

Implement best collections care practices described in this *Handbook* and:

- Locate collections above grade.
- ***Do not*** house collections in basements, attics, or areas susceptible to flooding.
- House museum collections in dedicated spaces separate from curatorial, research, and work areas and:
  - house supplies separately from collections storage
  - separate collections spaces from maintenance facilities and preparation areas with fire-rated walls, doors, and barriers
- Raise storage cabinets and shelving 4 – 6 inches off the floor.
- Raise oversized objects off the floor.
- House and secure:
  - objects in well-sealed locked steel cabinets or mobile compact storage systems, and close after use and at the end of each day
  - framed artwork on storage screens with steel security hardware such as S-hooks, L-hooks, or double-end bolt snaps
- Stabilize, attach, and/or restrain storage cabinets and furniture, including securing to walls, floors, and ceilings.
- Practice good housekeeping and avoid clutter.
- Inspect, isolate and monitor new accessions and objects returning to storage to prevent mold or pest contamination.

See Chapter 5: Biological Infestations and Chapter 7: Museum Collection Storage.

E.2. Mitigation for objects on exhibit

Implement best collections care practices described in this *Handbook* and:

- Secure:
  - objects in closed display cases *or* restrain objects on open display well out of reach
  - fragile objects such as ceramics on open display using custom mounts, in consultation with a conservator
  - framed artwork with steel security hardware such as S-hooks, L-hooks, or double-end bolt snaps
- Locate objects away from windows, doors, and pipes.
- Use laminated or shatterproof glass with UV screening, plexiglass, or protective film in exhibit cases and shelving, in consultation with exhibit designers.
- Light objects in accordance with MH-III, *Museum Collection Use*, Chapter 7, Section I.4: How do I balance exhibit lighting needs with preservation requirements?

Caution: Objects housed on open display and/or in open shelving are more susceptible to damage from fire, environmental extremes, and water from leaks and fire sprinklers. Plastic or Tyvek® sheeting is flammable and can melt or drip onto objects, and may cause significant damage.

See Chapter 9, Section E.10: Fire prevention for objects on exhibit and MH-III, *Museum Collection Use*, Chapter 7: Using Museum Collections in Exhibits.

E.3. Mitigation for structures housing collections

Implement best practices described in this *Handbook* and work with the:

- Facility manager to secure air ducts, ceilings, light fixtures, walls, and floors to the structure, and to ensure regular maintenance of the building envelope, utilities, and mechanical systems.
- Park safety officer, PSFC, and facility manager to establish a safety inspection schedule for fire hazards and hazardous materials in spaces housing collections.
- Structural engineer to determine the structural integrity and floor loading capacity of each structure housing collections to prevent structural collapse.
- Historical architect advisor, facility manager, and regional curator to add shatterproof glass or interior storm windows with UV screening in furnished historic structures, and develop other appropriate modifications in historic structures housing collections.

See Chapter 9, Section E.11: Fire prevention for objects on exhibit in furnished historic structures.

E.4. Construction and hot work damage mitigation

Construction and hot work pose an extreme risk of loss or damage to collections, particularly from fire and water. Implement precautions to prevent fire and water damage ***before*** work begins.

- Work with the PSFC to ensure a hot work permit (Form HW-1) is in place in accordance with RM-58: Structural Fire.
- Relocate objects from the area(s) or structure(s) undergoing extensive construction or renovation to a secure and stable location or protect in place.
- Ensure that collections and spaces housing collections are not exposed to the elements from open roofs or windows.

See Chapter 9, Sections E.15: Construction and renovation precautions and E.16: Hot work procedures. See also *Preservation Tech Notes* 2: Specifying Temporary Protection of Historic Interiors During Construction and Repair and 3: Protecting a Historic Structure during Adjacent Construction.

E.5. Earthquake damage mitigation

All NPS sites may be susceptible to earthquakes of varying frequency and intensity. The extent of earthquake damage depends on magnitude and duration, distance of the structure from the epicenter, soil and building type, level of seismic structural mitigation, and securing and stabilizing cabinetry and objects. Earthquakes can trigger other emergency incidents, such as fire due to fractured gas lines, or water damage caused by burst pipes. Damage and/or casualties may occur from falling debris.

Identify potential local earthquake risk. Avoid housing collections near geological fault lines, where possible. Work to meet applicable seismic safety standards with park and regional staff and experts, including architects and structural engineers experienced in working with museums and furnished historic structures.

To mitigate earthquake damage:

- Containerize:
  - fragile and breakable objects such as ceramics and glass in cavity packing, cradle mounts, ring and tie-down supports, or collars, or secure with cotton twill tape
  - objects in boxes or polyethylene foam-padded cabinet drawers
- Stabilize, secure, or restrain:
  - storage cabinets, exhibit cases, and equipment by attaching to walls, ceilings, and floors
  - objects on open display and in cases to prevent movement
  - large or heavy objects in storage and on exhibit as appropriate
  - tall or oversized objects with custom restraints
  - office equipment and filing cabinets, and close when not in use

- Install restraining bars, cords, or similar devices to prevent objects from sliding off shelving.

- House collections in structures built or modified to withstand earthquakes. Work with the facility manager, structural engineer, and architect to reinforce the structure. Work with the historical architect advisor for furnished historic structures.

- Ensure natural gas meters and propane tanks that serve collections areas are equipped with seismic shutoff valves.

See Chapter 7, Section I: Using Containers and Supports to House Objects, *COG* 21/12: A Custom Restraint to Mitigate Against Damage to Museum Objects Due to Seismic Activity, *Preservation Brief 41*: The Seismic Rehabilitation of Historic Buildings, and the USGS Earthquake Hazards Program for more information.

E.6. Fire damage mitigation

Structural fire is one of the most common and serious threats to collections. It can lead to loss of life and catastrophic loss or irreversible damage to collections and/or structures housing collections. Construction, renovation, hot work, and open flames pose a major fire risk.

See Chapter 9, Sections E: Fire-Safe Practices and Design and F: Fire Protection Systems and Equipment for best practices to mitigate structural fire damage.

E.7. Hazardous materials spills, exposure, and explosion damage mitigation

Hazardous materials spills or exposure may result from broken gas or fuel pipelines, earthquakes, fuel spillage, and volcanic fumes. Spills can include hazardous and biological waste and radioactive materials. Exposure may result from sick, infected, or deceased animals and blood, bodily fluids, or infectious material. Work with the safety officer or specialist to identify and dispose of hazardous materials and address spills.

Explosions can be caused by bombs, earthquakes, fires, malfunctioning gas lines, construction and hot work, hazardous objects, suspicious packages and items, or transportation accidents. Terrorist attacks can result in explosions and bombings that can trigger structural collapse, and may be preceded by a called-in or mailed-in bomb threat.

To mitigate hazardous materials spills and exposure or explosion damage:

- House:
  - collections away from laboratories and other areas where hazardous or flammable materials are housed or used
  - hazardous materials used in collections preparation in accordance with Chapter 9, Section E.6: Housing flammable and combustible materials
  - cellulose nitrate-based materials in accordance with Chapter 9, Section E.8: Cellulose nitrate-based materials
  - historic vehicles separately from general collections storage and

away from maintenance facilities

- Ensure fuel and oil are drained from historic vehicles and machinery and tanks are vapor free. Disconnect and secure vehicle batteries.
- House and handle historic firearms and ordnance with extreme caution in accordance with Chapter 11: Curatorial Health and Safety.
- Immediately notify the park safety officer of any gas odors.
- Properly dispose of hazardous waste.
- Maintain a hazardous materials list with storage locations and safety data sheets (SDS).

See Chapter 9, Section E.7: Housing wet (fluid-preserved) specimens and Appendix M: Management of Cellulose Nitrate and Ester Film. See also *COG* 11/3: Storage Concerns For Fluid-Preserved Collections, NPS Hazardous Waste Operations & Emergency Response Training Manual, DO 24.4.3.23: Cellulose Nitrate and Cellulose Ester Film and the OSHA, NFPA, and the Department of Justice's Bureau of Alcohol, Tobacco, Firearms and Explosives and Department of Homeland Security Hazardous Response Program websites.

E.8. Medical incident mitigation

Medical incidents such as falling or tripping in collections storage and exhibit areas can cause bodily injury and/or damage to objects.

- To prevent or minimize medical incidents:
  - ensure adequate lighting and avoid abrupt changes in light levels from area to area
  - keep stairways, landings, passageways, and aisles well lit and unobstructed
  - secure mats to the floor
  - keep pathways free of debris and carts
  - use non-skid wax on floors
  - do not overload boxes, shelving, and cabinets
  - secure objects and materials to prevent falling
  - place heavier objects on bottom shelves or closer to the ground
  - post warning signs in areas of potential danger
- Maintain a list of medical emergency services, staff with first aid training, and local hospitals in the MCEOP.
- Maintain basic and complete first aid kit(s), check annually, and replace expired supplies as needed.

See Chapter 6: Handling, Packing, and Shipping and Chapter 11: Curatorial Health and Safety for additional information.

E.9. Mold outbreak mitigation

Mold outbreaks are indicative of excess moisture. Outbreaks generally occur at 65% Relative Humidity (RH) and above. HVAC malfunctions, leaking pipes, poorly-sealed windows and doors, fire sprinkler discharge, or severe weather are common causes of high humidity and mold outbreaks.

Mold may be hazardous to health, depending on exposure and individual risk factors, and can cause severe damage to collections. Address moisture problems immediately to prevent mold outbreaks.

To mitigate damage from mold outbreaks:

- Maintain RH well below 65% and a stable temperature in accordance with Chapter 4: Museum Collections Environment. The RH set point for most NPS collections lies between 45 – 55 %. Fluctuations should not exceed ± 5% from the set point.
- Inspect the collection regularly for dampness, signs of visible mold growth, or a telltale "musty" smell.
- Identify and promptly remove the cause of the mold or dampness within 48 hours to avoid increased mold growth or major outbreaks.
- Work with the facility manager to maintain a well-sealed building envelope, promptly repair leaks, and remove all sources of standing water, moisture, or excess humidity.
- Work with the safety officer and a specialist to have the mold identified and abated as soon as possible.
- If the mold is determined to be hazardous, restrict access until the mold has been abated and the area is safe to re-enter.
- Follow salvage procedures for mold, and work with a conservator to clean contaminated objects.

See Section E.14: Water leak and flood mitigation, Figure 10.24: Salvage Procedures, Chapter 11: Curatorial Health and Safety, *COG* 1/8: Using Silica Gel In Microenvironments, *COG* 3/4: Mold: Prevention of Growth in Museum Collections, OSHA's Fact Sheet: Mold Hazards during Disaster Cleanup, and the CDC's Facts about *Stachybotrys chartarum* and Other Molds.

E.10. Power outage mitigation

Power outages include the loss of electric power or HVAC system shutoff. They may occur due to severe weather, construction, and/or other related work. Power outages can incapacitate a park, culminating in a complex emergency incident. This can result in:

- High RH and temperature due to HVAC failure that can lead to mold outbreaks, pest infestations, and accelerated object deterioration.
- Failure of security and fire detection and/or suppression systems.
- Loss of access to collections and collections information.
- Inadequate lighting that can result in medical incidents.

To mitigate damage from power outages:

- Work with the facility manager to:
  - ensure adequate back-up power sources, including generators, for emergency exit lights, HVAC, fire detection and suppression, security, lighting, and other utilities and systems
  - regularly inspect, test, and maintain utilities and equipment, including back-up power sources and batteries
  - install emergency lights near electrical, fire, and security panels and along evacuation routes
  - ensure that elevators have an emergency alarm, working phone connected to a 24/7 receiving, monitoring, or central station, and emergency access
  - arrange for alternate means of relocating objects if elevators are non-functional
  - acquire generators and dehumidifiers for spaces housing collections
- Use UL listed surge suppressors on equipment, including computers and freezers.
- Work with the facility manager or safety officer to obtain advance notice for planned outages.
- Plan for alternate arrangements should a long-term outage occur.

E.11. Severe weather damage mitigation

Severe weather includes blizzards, electrical storms, hail, hurricanes, sleet, tornadoes, and wind and winter storms. Many severe weather incidents can be anticipated, allowing for advance preparation such as relocation of First Priority objects. Severe weather may contribute to a complex emergency incident, such as a hurricane that results in flooding and structural damage.

Monitor National Weather Service (NWS) advisories and watch for signs of approaching weather fronts. Contact the facility manager to evaluate the potential impact when severe weather is predicted. Notify staff if action is required.

To mitigate damage from severe weather:

- Locate collections and museum records above grade and outside areas susceptible to flooding.
- ***Do not*** house collections in basements or attics.
- Raise storage cabinets 4 – 6 inches off the floor.
- Raise oversized objects off the floor.
- Secure objects on exhibit:
  - in closed exhibit cases
  - on open display using mounts or restraints

  - away from windows, doors, and pipes, or protect in place

- Work with the facility manager, architect, historical architect advisor, and structural engineer to:

  - ensure the structure and structural elements are secure
  - seal and waterproof building envelope, including doors, windows, roofs, and basements
  - secure the foundation, roof, HVAC systems, lighting, outbuildings, and drainage and water removal systems
  - install storm shutters and storm windows in storage and work areas, and in furnished historic structures as appropriate
  - remove dead tree branches adjacent to structures housing collections
  - install lightning rods on structures housing collections

See FEMA, NOAA, and NWS advisories. See also NPS's Climate Change Policy and Planning web page.

E.12. Vandalism damage mitigation

Vandalism may be carried out by staff, researchers, or visitors. It can occur together with the theft of objects, civil unrest, and acts of terrorism. Vandalism may also occur after an emergency incident if security procedures and systems are not operational.

To mitigate damage from vandalism:

- House objects on exhibit in well-sealed cases with alarms, secure mounts, locks, and/or security screws.

- Secure ceramics and other fragile objects on open display using special mounts and/or alarmed cases.

- Locate collections storage and work spaces in secure areas away from public or ceremonial spaces, where possible.

- Maintain and implement operational and physical security, including:

  - access and key control policies and procedures, the NPS Visitor Log, and opening and closing procedures
  - accompanying all non-curatorial staff (NPS and non-NPS) in collections and/or work spaces
  - ongoing monitoring of non-curatorial staff in research spaces
  - functioning intrusion detection and alarm systems and closed-circuit televisions monitored 24/7
  - securing doors, windows, and locks at all times

- Work with interpretation to ensure visitors are accompanied on tours of furnished historic structures, and keep objects out of reach using protective barriers, enclosures, and other security measures.

- Report vandalism immediately. Arrange for repairs and additional security measures as soon as possible.

See Chapter 14: Museum Security and DO 9.2.2: Law Enforcement Authority.

E.13. Volcanic damage mitigation

Volcanoes may emit hot ash and acidic gases and cause mudslides, flash floods, tsunamis, earthquakes, rock falls, and explosive lateral blasts. Noxious fumes, volcanic smog, and acidic, corrosive ash can spread from the source of the eruption, damaging collections and structures and threatening life safety.

To mitigate volcanic damage:

- Avoid locating museum storage, work, or exhibit areas near active volcanoes, where possible.
- Work with the facility manager to:
  - install furnace filters to screen out particulate ash
  - remove all sources of excess humidity
  - keep interior RH stable to prevent volcanic ash from concretizing

See NWS, FEMA, and the USGS Volcano Hazards Program.

E.14. Water leak and flood mitigation

Water is one of the most common causes of damage to collections and structures housing collections. Water damage frequently results from:

- Poorly-sealed building envelopes, including leaking roofs, windows, or skylights.
- Burst, leaking, or faulty pipes.
- Poorly-maintained or malfunctioning HVAC systems.
- Drainage back-ups.
- Unemptied or faulty dehumidifiers.
- Unintended fire suppression system discharge.

If moisture problems are not addressed immediately, mold outbreaks are likely to occur.

Water damage can also result from natural disasters such as flash floods, floods, heavy rains, hurricanes, and tidal action. Some flooding incidents can be anticipated, allowing for advance preparation such as relocation of First Priority objects. Parks located near bodies of water are especially vulnerable to flooding.

To mitigate water and flood damage:

- Locate structures housing collections outside the 100-year flood plain and away from bodies of water such as dams, underground streams, swamps, tidal rivers, or coastal areas, where possible.
- Design, build, and maintain well-sealed structures housing collections, including storage, work, and exhibit spaces, to avoid water penetration.

- Locate collections and museum records above grade.
- ***Do not*** house collections in basements, attics, or areas susceptible to moisture and water penetration.
- Maintain RH well below 65% and a stable temperature in accordance with Chapter 4: Museum Collections Environment. The RH set point for most NPS collections lies between 45 – 55 %. Fluctuations should not exceed ± 5% from the set point.
- House collections in well-sealed metal cabinets and return to cabinets when not in use.
- Raise storage cabinets 4 – 6 inches off the floor.
- Raise oversized objects off the floor.
- Install water alarms (water detectors) to detect flooding.
- ***Do not*** house collections:
  - directly against outside walls susceptible to condensation and RH fluctuations
  - directly below or adjacent to sources of running water such as restrooms and water, waste, steam, fuel, or other liquid pipes
  - near condensing or other moisture-generating mechanical units
- Avoid storing collections in chipboard trays or other open containers that can capture and retain water.
- Inspect the collection regularly for signs of visible mold growth or a telltale "musty" smell.
- Empty dehumidifier overflow pans regularly.
- Only run piping for systems that serve collections through spaces housing collections, such as fire sprinklers and HVAC.
- ***Do not*** run grey water mains through spaces housing collections.
- Work with the facility manager to ensure that:
  - door seals, foundations, gutters, piping, roofs, walls, windows, brick, masonry, mortar joints, and other structural components are maintained in good condition
  - utilities, including HVAC and sprinkler systems, are regularly inspected, tested, and maintained
  - faucets, humidifiers, dehumidifiers, and other equipment are regularly checked and functioning
  - check valves are installed in sewer traps to prevent backups
  - pumps are installed and functioning

- landscape and plantings drain away from the structure

- ***Do not*** use carpeting and wallpaper in storage and work areas.

- Exclude drains in storage and exhibit areas to prevent backups and minimize open sources of moisture that can lead to mold and pest issues.

- Identify and label the location of water and utility shutoff valves in the MCEOP and work with the facility manager to ensure that they are shut off in the event of a water emergency.

See Section E.11: Severe weather damage mitigation, NPS Management Policies 9.1.1.5: Siting Facilities to Avoid Natural Hazards, and the FEMA, NOAA, and NWS websites. See also Chapter 4, Sections F.5: What deterioration is caused by relative humidity? and F.6: What is the recommended RH set point and fluctuation range for general collections?

F. Museum Collections Emergency Operations Plan

The Museum Collections Emergency Operations Plan (MCEOP) includes life safety procedures, Emergency Response Steps, and other essential information needed to respond to emergency incidents. In accordance with DO 24.4.3.10: Emergency Operation and NPS Museum Emergency Planning and Preparedness Standard (1) (MH-I 10.B.2.1), parks with museum collections must have a MCEOP that is appended to the park EOP.

The MCEOP is aligned with and maintained on the same review and update schedule as the park EOP. Keep the MCEOP current and sufficiently detailed to be useful and easy to implement.

F.1. Museum Collections Emergency Operations Plan (MCEOP) contents

The MCEOP should include the following (***Note:*** section and figure references for MCEOP elements not described in this section are indicated (in parentheses) below):

- Museum Emergency Planning Standards and Policies (Section B: DOI and NPS Emergency Planning Policies and Standards)
  - DOI and NPS Museum Emergency Planning Policies
  - NPS Museum Emergency Planning and Preparedness Standards

- Incident Command System (ICS) (Section A.7: What is the Incident Command System (ICS)?)

- Collections and Structures Housing Collections Overview (Figure 10.4: Museum Collections Emergency Operations Plan (Sample))

- Risk Assessment (Section C: Risk Assessment)
  - Risk assessment documents on file
  - Risks to collections and structures housing collections

- MCEOP Team Responsibilities

- First Priorities for Relocation and Salvage (Section H: Relocating Museum Objects)
  - First Priority objects for Relocation and Salvage
  - Restricting First Priority Information
- Emergency Response
  - Evacuation plan
  - Emergency Response Steps
  - Designated assembly point(s)
- Security (Section D: Museum Mitigation Action Plan and Figure 10.4: Museum Collections Emergency Operations Plan (Sample))
  - Designated secure and stable location for relocated objects
  - Access and key control policies and procedures
- Emergency Contact Information
  - Emergency contact list
  - Vendor and sources of assistance list
- Emergency Equipment, Services, and Supplies
  - Utility and mechanical equipment shut-offs
  - Emergency supplies and equipment
- Salvage Procedures (Section I: Salvaging Museum Objects and Figure 10.24: Salvage Procedures)
- Post-Emergency Critique (Figure 10.26: Post-Emergency Critique)
- MCEOP Update and Review
- Figures and Floor Plans
  - Site map
  - List and floor plan(s) of First Priorities for Relocation and Salvage *(Restricted distribution)*
  - Emergency supplies and utilities floor plan(s)
  - Evacuation route floor plan(s)

A Sample Museum Collections Emergency Operations Plan (Figure 10.4) is provided for customization by parks.

F.2. MCEOP team leader responsibilities

The curator is the ***MCEOP team leader*** and collaborates with the MCEOP team, emergency operations coordinator, facility manager, regional curator, and interdisciplinary team to develop the MCEOP. The MCEOP team leader represents the collections at park emergency and ICS planning meetings, and is on the park emergency call list. The MCEOP team leader collaborates with

MCEOP team members to:

- Develop and implement the MCEOP, review annually, and update every five years.
- Append the MCEOP to the park EOP in collaboration with the emergency operations coordinator.
- Develop Emergency Response Steps.
- Develop emergency contact, vendor and sources of assistance, and supply and equipment lists.
- Select MCEOP team members, assign responsibilities, and schedule MCEOP meetings.
- Determine object First Priorities for Relocation and Salvage (See Section H: Relocating Museum Objects).
- Arrange for and coordinate:
  - designated secure and stable location(s) for relocated objects, including access and key control policies and procedures
  - emergency supplies, equipment, vendor and contractor agreements, purchases, and services
  - relocation and salvage activities
  - documentation of museum emergency planning, response, and salvage activities
  - training with the emergency operations coordinator and safety officer
  - assistance from nearby parks, local museums, and conservators
- Brief superintendent and emergency operations coordinator on museum program needs.

See Sections D.4: Arranging services in advance of an emergency incident and G.4: National sources of assistance.

F.3. MCEOP team member responsibilities

MCEOP team members perform relocation and salvage activities, and are assigned the following responsibilities by the MCEOP team leader:

- *Emergency registrar* manages response and salvage documentation, including labeling, salvage activities, and supplies/equipment orders.
- *Salvage coordinator* prioritizes objects for salvage and facilitates packing and relocation.
- *Security coordinator* ensures collections security and works with the facility manager and emergency operations coordinator on utility and service recovery.

Designated MCEOP members should be available to respond 24/7 when an

emergency occurs.

F.4. Restricting Relocation and Salvage First Priority information

Secure collections by limiting distribution of the Relocation and Salvage First Priority list and floor plan(s). The MCEOP team leader will:

- Maintain the MCEOP (paper copy) with the First Priority list and floor plan(s) in a secure, locked cabinet in the curatorial office, and limit access to electronic copies.
- Distribute MCEOP copies with the First Priority list and floor plan(s) to the superintendent and regional curator that must be secured in a locked cabinet.
- Provide copies of the MCEOP with the First Priority list and floor plan(s) ***redacted*** to the emergency operations coordinator and safety officer.
- Provide MCEOP team members with copies of the MCEOP with the First Priority list and floor plan(s) ***redacted***, and distribute First Priority list and floor plan(s) as needed.
- Maintain the MCEOP in a loose-leaf binder. Mark pages with First Priority information with "Sensitive Information: Do Not Distribute."

F.5. Emergency Response Steps included in the MCEOP

Include the following Emergency Response Steps in the MCEOP:

Active shooter; disruptive individual; earthquake; explosion; fire; hazardous materials spill, odor, and gas leak; medical emergency; mold outbreak; power outage; severe weather; suspicious package or item; suspicious person and vandalism; threat (threatening call or bomb threat); volcanic eruption; and water leak and flood.

See Section G.1: Emergency Response Steps for different emergency incidents and Figures 10.5 – 10.19: Emergency Response Steps.

F.6. Emergency contact list

The emergency contact list includes contact information and titles for:

- MCEOP team members and other museum staff.
- Park staff, including park EOP staff.
- Regional staff.
- Local sources of assistance, including fire, hospital, and police.
- Contractors and vendors.

Set up the list so that each staff member is responsible for calling several others at the time of the emergency to free up the MCEOP team leader for emergency response coordination. Post copies of the list in work and collections storage areas. Team members should keep a current copy of the contact list at home.

See Figure 10.21: Emergency Contact List (Sample) and Figure 10.22: Emergency Vendor

and Sources of Assistance List (Sample).

F.7. Emergency supplies and equipment

Assemble emergency supplies and equipment for response, salvage, and environmental control in advance of an emergency incident. Store emergency supplies in an emergency cache labeled, "For Emergency Use Only." Indicate cache locations and equipment such as dehumidifiers and fans on floor plans. Inventory and restock supplies and equipment annually and as needed. Maintain an emergency cache in each structure or space housing collections.

MCEOP team members should maintain a "ready bag" for use during and after emergency incidents. Bags should include documents, clothing, small tools, flashlight and batteries, hard hat, mask, and gloves. Centers and regional curators should maintain emergency supply and equipment caches to assist parks as needed.

See Figure 10.23: Emergency Supplies and Equipment (Sample). See also the DOI sample cache inventory and inspection form.

F.8. Floor plans

Develop and annotate floor plans in consultation with the facility manager and emergency operations coordinator. Indicate locations of:

- First Priorities for Relocation and Salvage, including paper and electronic museum records *(**redact** as described in Section F.4: Restricting Relocation and Salvage First Priority information).*
- Hazardous collections and non-collection materials.
- Emergency supplies and utilities, including:
  - emergency access key box
  - emergency and salvage equipment and supply caches
  - fire alarm pull boxes, fire control panels, extinguishers, and suppression equipment
  - utility locations, such as shutoff valves for water and power
- Evacuation route(s) and designated assembly point(s) from the park Occupant Emergency Plan (OEP).

Exclude security alarm panel, camera, or sensor locations on floor plans.

F.9. Review and update cycle

Review the MCEOP annually and update all copies every five years in accordance with NPS Museum Emergency Planning and Preparedness Standard (1) (MH-I 10.B.2.1). The MCEOP should also be reviewed and updated after each major emergency incident, change in the MCEOP team leader, large acquisition, new exhibit, when moving collections to another space or structure, identifying new risks, or entering into new cooperative relationships with emergency responders.

G. Museum Emergency Response

During an emergency incident, implement the Emergency Response Steps provided in Figures 10.5 – 10.19 and follow evacuation plans in the park Occupant Emergency Plan (OEP). Follow Incident Command System (ICS) procedures when activated.

During an emergency, life safety is paramount.

G.1. Emergency Response Steps for different emergency incidents

Emergency Response Steps are one-page action plans developed in advance of emergency incidents to ensure timely and effective response. Include Emergency Response Steps (listed in alphabetical order below) in the MCEOP.

- Active Shooter
  Figure 10.5
- Disruptive Individual
  Figure 10.6
- Earthquake
  Figure 10.7
- Explosion
  Figure 10.8
- Fire
  Figure 10.9
- Hazardous Materials Spill, Odor, and Gas Leak
  Figure 10.10
- Medical Emergency
  Figure 10.11
- Mold Outbreak
  Figure 10.12
- Power Outage
  Figure 10.13
- Severe Weather
  Figure 10.14
- Suspicious Package or Item
  Figure 10.15
- Suspicious Person and Vandalism
  Figure 10.16
- Threat (Threatening Call or Bomb Threat)
  Figure 10.17
- Volcanic Eruption
  Figure 10.18
- Water Leak and Flood
  Figure 10.19

Work with the emergency operations coordinator to align museum Emergency Response Steps with park EOP action plans and determine designated Shelter in Place locations for each structure housing collections.

G.2. Actions taken with advance notice

Take the following steps when there is advance notice of an emergency incident, such as severe weather:

- Monitor NWS and other advisories as appropriate.
- Tape refrigerators, freezers, and cold storage units shut and:
  - turn units to the coldest settings
  - seal with polyethylene sheeting and duct tape
  - mark with "Do not open" and name and date
- Secure objects in storage and on exhibit:
  - house in closed cabinets
  - move to center of the room and cover with polyethylene sheeting
  - cover large, freestanding non-moveable objects and furnishings with polyethylene sheeting, and restrain and/or brace as needed
  - raise oversized objects off the floor
- Relocate First Priority objects, accession (and deaccession) book, NPS Visitor Log, and a paper copy of the MCEOP to a designated secure and stable location.
- Back up and secure electronic museum files in a designated secure and stable location.
- Deinstall objects from exhibit and move to a designated secure and stable location as time permits.
- Work with facilities management to check back-up power sources for fire protection, security, and HVAC systems, and emergency lights.
- Secure and close all doors and windows and cover with storm shutters, boards, or tape.
- Brace exterior doors and place sandbags in front of doors as needed.

G.3. Shelter in Place

During certain emergency incidents, it may be safer to Shelter in Place than to evacuate. See specific Emergency Response Steps for appropriate Shelter in Place procedures.

G.4. National sources of assistance

Federal and private organizations listed below (in alphabetical order) provide assistance and training in emergency response and salvage.

- American Institute for Conservation Alliance for Response Tool Kit
- American Institute for Conservation National Heritage Responders
  24-hour assistance telephone number: (202) 661-8068
- Federal Emergency Management Agency (FEMA) Emergency Management Institute (EMI)

- Heritage Emergency National Task Force (HENTF) (FEMA)
- National Park Service conservators at centers and regional offices
- Northeast Document Conservation Center (NEDCC)
  24-hour assistance telephone number: (978) 470-1010
- Smithsonian Institution Cultural Rescue Initiative

G.5. Posting emergency response information

Post Emergency Response Steps, emergency contact list, and OEP evacuation routes and floor plans in accessible locations in storage and work areas.

H. Relocating Museum Objects

Determine which objects should be relocated to a secure and stable alternate structure or space ***in advance*** of emergency incidents. Establish priorities for relocation and salvage of objects, including "First Priority" objects and others as time permits. Designate a secure and stable location in advance to avoid confusion and delay during emergency response and salvage.

H.1. How are object First Priorities for Relocation and Salvage determined?

Determine relocation and salvage priorities by reviewing the Scope of Collection Statement and accession and catalog records, and using the First Priority Criteria for Object Relocation and Salvage (Figure 10.20) and Object Assessment (Figure 9.3). Consult with the Collections Advisory Committee and MCEOP team to establish priorities for relocation and salvage. For centers or parks serving as repositories for multiple units, work with parks to establish relocation and salvage first priorities.

First Priority Criteria for Object Relocation and Salvage
• Associated with Eminent Individual(s) or Event(s) or Resource(s)
• Essential for Resource Management
• High Frequency of Use
• High Interpretive and/or Educational Value
• High Monetary Value
• High Research and Scientific Value
• Mission Critical
• On Loan to the Park
• Rare or Irreplaceable
• Type Specimen
• Voucher Specimen

Figure 10.20. First Priority Criteria for Object Relocation and Salvage

In certain cases, a single criterion will determine that an object should be designated as First Priority, such as Rare or Irreplaceable, Type Specimen, or High Monetary Value. For others, a preponderance of criteria will determine if an object should be designated as First Priority, such as Association with Eminent Individual(s) or Event(s) or Resource(s), High Interpretive Value, and Mission Critical. Evaluate these criteria together with ease of access and

relocation, as well as object size, mobility, and susceptibility to damage.

ONLY use First Priority determinations for relocation and salvage.

The accession (and deaccession) book ***must*** be First Priority for Relocation and Salvage. The NPS Visitor Log should also be a First Priority.

H.2. How are First Priority objects and museum records identified for relocation?

Mark cabinets containing First Priority objects with red tags to facilitate relocation by first responders during emergency incidents. Tag First Priority objects as "First Priority for Relocation." Only use object tags made of Tyvek® without metal grommets and strung with non-reactive, unsized string. ***Never*** adhere labels directly onto objects.

Include a floor plan and a list of First Priority objects with storage or exhibit locations in the MCEOP. ***Restrict distribution*** in accordance with Section F.4: Restricting Relocation and Salvage First Priority information.

Designate and maintain an ICMS data field for First Priority Objects for Relocation and Salvage.

Caution: Creating a First Priority list and tagging first priority objects has the potential to create a "shopping list" that increases ease of theft. As many thefts occur due to internal security breaches, the curator must balance the need to relocate and salvage objects during an emergency with collections security.

See Figure 10.4: Museum Collections Emergency Operations Plan (Sample) for a sample list and floor plan of First Priorities for Relocation and Salvage.

H.3. What are the considerations for seasonal, remote, and high risk areas?

Evaluate objects housed in seasonally-open or remote locations on a case-by-case basis. The curator should assess risk and whether objects should be relocated in consultation with the emergency operations coordinator, PSFC, and regional curator. Relocate objects designated as First Priority. Be aware that repeated packing, handling, and relocation is likely to damage objects.

If object(s) are to remain *in situ*, the structure needs to be secure and free of identified risks. Electrical wiring needs to be in good condition, and electrical appliances disconnected.

H.4. When does relocation happen?

Relocation may occur ***prior to*** an emergency incident, when there is advance warning, or ***immediately after*** the emergency incident, once the affected space is cleared for entry. Relocate First Priority objects ***only*** when a greater danger is posed by leaving them in storage or on exhibit.

H.5. Where should objects be relocated?

In advance, arrange for a designated secure location to house collections that has stable RH and temperature and excludes UV. This location may be in another structure in the park or at another park, center, or institution.

I. Salvaging Museum Objects

The first 48 – 72 hours after an emergency incident are critical to prevent further object damage or loss. Relocate and salvage First Priority objects first. Consider variables such as object condition and damage, access, and ease of movement when determining which other objects should be relocated and salvaged.

The goal of salvage is to stabilize affected objects. Salvage should not be considered conservation treatment. Remember, "less is more." Do the minimum necessary to prevent loss or irreversible damage to the object. After 48 – 72 hours, arrange for professional conservation of objects that need treatment.

I.1. Procedures before beginning salvage

Re-enter the structure to assess the affected area(s) and collections once cleared. Set up and secure the salvage area and relocate objects. Work with the regional curator and a conservator to determine if and what professional treatment is needed after the objects have been removed from immediate danger. Document damage and salvage procedures with written reports and photographs. Include catalog numbers in object images.

I.2. Access to the salvage area

The curator needs to ensure access and key control policies and procedures for affected structures and spaces are in place. The curator sets up procedures to secure and control access to the salvage area, including a daily sign-in log for MCEOP team members, volunteers, and service providers.

I.3. Determining which objects should be salvaged

Salvage First Priority objects first, including the accession (and deaccession) book. If multiple structures housing collections are affected, address the structure housing the greatest number of First Priority objects first. Determine which other objects should be salvaged, as time permits, in consultation with the regional curator and a conservator. Consider variables such as object condition and damage, size and weight, access, and ease of movement. Be aware that certain materials, such as animal skins, basketry, glass plate negatives, metals, paintings, photographic materials, and works on paper may require professional treatment after the first 48 – 72 hours have passed.

I.4. Salvage procedures for different types of damage

See Figure 10.24: Salvage Procedures for the following procedures:

- Before Salvage
- Preparing the Salvage Area
- General Salvage Procedures
- Mold
- Water Damage to Objects
- Water Damage to Spaces Housing Collections

See Section K: Bibliography, *Conserve O Gram* series 21: Disaster Response and Recovery, and *Primer on Disaster Preparedness, Management & Response*, issued by the Smithsonian Institution, National Archives and Records Administration, Library of Congress, and National Park Service. See also the Emergency Response & Salvage Wheel, published by AIC.

J. Training and Documentation

J.1. What training is needed?

Arrange for hands-on training for museum staff, including the MCEOP team, ***before*** emergency incidents occur. To avoid compromising life safety and minimize damage to collections, the team must know what to do without having to think about it. Training improves efficiency and builds "muscle memory" that allows Emergency Response Steps and salvage procedures to be adapted to the specifics of each emergency incident. Have the entire team undergo training annually and whenever a team member is replaced.

The MCEOP team leader should take the following:

- FEMA IS-700.B: An Introduction to the National Incident Management System (online).
- DOI All-Hazards Resource Advisor Basic Course.

Museum staff, including the MCEOP team, should take the following:

- FEMA IS-100.C: Introduction to Incident Command System (online).
- FEMA IS-200.C: Basic Incident Command System for Initial Response (online).
- Situational awareness training provided by the emergency operations coordinator.
- CPR/first aid training.
- PPE training for designated MCEOP team members.

Museum staff, including the MCEOP team, should become familiar with:

- Handling objects in emergency situations.
- Locating and using emergency equipment, including portable fire extinguishers.
- Basic object salvage techniques.
- Documentation, including how to complete a Collection Damage and Salvage Overview (Figure 10.25) to record damage.

Familiarize non-museum staff in regular contact with collections on exhibit in visitor centers and furnished historic structures, such as interpreters, with appropriate sections of the MCEOP.

J.2. What emergency drills and exercises should be conducted?

Conduct hands-on museum emergency preparedness, response, and salvage exercises in collaboration with the emergency operations coordinator, safety officer, and PSFC. Ensure museum program needs are incorporated

into the park's annual emergency training, emergency drills, and mock emergency and tabletop exercises. Conduct drills and exercises annually and when MCEOP team composition changes.

J.3. What documentation is needed?

Document emergency planning and preparedness activities, object movement, and relocation, damage, and salvage activities. House documents in the curatorial office and limit distribution as appropriate. Documentation includes:

- *Planning and mitigation:* Checklist and other risk assessment documents, current Museum Mitigation Action Plan, relocation and salvage First Priority determinations (***restricted access***), and MCEOP.
- *Implementation of corrective actions:* Museum Mitigation Action Plan (Figure 10.3), Object Assessment (Figure 9.3), and Record of the Decision Not to Implement Corrective Actions in a Structure Housing Collections (Figure 10.3b).
- *Relocation:* Tracking and object relocation and storage information, including packing inventories.
- *Salvage:* Written reports, logs, Collection Damage and Salvage Overview (Figure 10.25), condition reports describing the type(s) of object damage sustained, salvage activities (freezing, drying, etc.) and who authorized them, and other information.
- *Photography:* Images of affected objects and salvage activities.

J.4. What are the Post-Emergency Critique and After-Action Review?

The Post-Emergency Critique (Figure 10.26), conducted once salvage has ended, evaluates the effectiveness of the MCEOP. It is used to update the MCEOP. The MCEOP team leader and team members should collaboratively complete the Post-Emergency Critique to identify strengths and weaknesses and improve performance. Complete the Post-Emergency Critique within a month of the emergency incident to ensure that lessons learned are documented.

The park, region, or WASO will conduct an After-Action Review (AAR) after all incidents in accordance with DO 55.5.3.7: After Action Review (AAR). The MCEOP team leader should represent the museum program at the AAR review discussion.

K. Bibliography

Aguilar, Antonio. "The Seismic Rehabilitation of Historic Buildings." *Technical Preservation Brief* 41. Washington DC: National Park Service, 2016.

American Alliance of Museums. *Developing a Disaster Preparedness/ Emergency Response Plan*. Alliance Reference Guide. Arlington, VA: AAM Press, 2012.

American Institute of Conservation Wiki. "Emergency Preparedness and Response: Stabilizing the Environment and Collections." 2017.

Canadian Conservation Institute. "Emergency Preparedness for Cultural Institutions: Identifying and Reducing Hazards." *CCI Notes* 14/2. Ottawa: Government of Canada, 1995.

Carmichael, David W. *Implementing the Incident Command System at the Institutional Level: A Handbook for Libraries, Archives, Museums, and Other Cultural Institutions*. Washington, DC: Heritage Preservation, 2010.

Department of the Interior. "Emergency Management Plan." 2015.

Department of Homeland Security. National Response Framework. 2016.

Dorge, Valerie and Sharon L. Jones. *Building an Emergency Plan: A Guide for Museums and Other Cultural Institutions*. Los Angeles, CA: The Getty Conservation Institute, 1999.

Federal Emergency Management Agency (FEMA). *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning: State and Local Mitigation Planning How-To Guide.* Washington, DC, 2005.
_____. "Be Informed." Ready.gov.
_____. "Emergency Management Institute Glossary." 2019.
_____. "National Disaster Recovery Framework." 2017.

Frens, Dale H. "Temporary Protection: Specifying Temporary Protection of Historic Interiors during Construction and Repair." *Preservation Tech Notes,* no. 2. Washington DC: National Park Service, 1993.

Galban, Maria. "Health And Safety Hazards Arising From Floods." *Conserve O Gram* 21/1. Washington, DC: National Park Service, 2002.
_____. "Salvage At A Glance, Part III: Object Collections." *Conserve O Gram* 21/6. Washington, DC: National Park Service, 2002.
_____. "Salvage At A Glance, Part IV: Natural History Collections." *Conserve O Gram* 21/7. Washington, DC: National Park Service, 2003.

Galban, Maria and Sara J. Wolf. "Salvage At A Glance, Part V: Textiles." *Conserve O Gram* 21/8. Washington, DC: National Park Service, 2003.

Harold, Jeanne M. "A Custom Restraint to Mitigate Against Damage to Museum Objects Due to Seismic Activity." *Conserve O Gram* 21/12. Washington, DC: National Park Service, 2009.

Heritage Preservation Emergency National Task Force. *Safeguarding Our Cultural Heritage: Emergency Response and Salvage Wheel.* Washington, DC: National Institute for the Conservation of Cultural Property, Inc., 2011.

Lord, Allyn, Carolyn Reno, and Marie Demeroukas. *Steal This Handbook! A Template for Creating a Museum's Emergency Preparedness Plan.* Columbia, SC: Southeastern Registrars Association, 1994.

Merritt, Jane and Tish Brewer. "Mold: Prevention Of Growth In Museum Collections." *Conserve O Gram* 3/4. Washington, DC: National Park Service, 2007.

National Park Service. "An Emergency Cart For Salvaging Water-Damaged Objects." *Conserve O Gram* 21/2. Washington, DC, 2002.
_____. Director's Order #24: *NPS Museum Collections Management*.
_____. *Museum Handbook Part I*, Chapter 4: Museum Collections Environment.
_____. Chapter 5: Biological Infestations.
_____. Chapter 6: Handling, Packing, and Shipping.
_____. Chapter 7: Museum Collection Storage.
_____. Chapter 9: Museum Fire Protection.
_____. Chapter 11: Curatorial Health and Safety.
_____. Chapter 14: Museum Security.
_____. *Part II*, Chapter 4: Inventory and Other Special Instructions.
_____. *Part III*, Chapter 7: Using Museum Collections in Exhibits.
_____. *Primer on Disaster Preparedness, Management & Response*.
_____. Reference Manual #55: Incident Management Program.

Northeast Document Conservation Center. "Emergency Management: Emergency Planning." *Preservation Leaflet 3.3*. Andover, MA: NEDCC Staff, 2017.

Northeast Document Conservation Center, Massachusetts Board of Library Commissioners, Institute of Museum and Library Services, and National Center for Preservation Technology and Training. dPlan™: The Online Disaster-Planning Tool for Cultural and Civic Institutions. 2006.

Pardue, Diana R. "Volcanic Ash: Cleaning Museum Objects." *Conserve O Gram* 3/5. Washington, DC: National Park Service, 1993.

Randl, Chad. "Protecting a Historic Structure during Adjacent Construction." *Preservation Tech Notes 3*. Washington, DC: National Park Service, 2001.

Society for the Preservation of Natural History Collections. "Museum SOS: Strategies for Emergency Response and Salvage." *SPNHC 19th Annual Meeting*, New York and Washington DC, 14 May 2004.

Spennemann, Dirk H. R. and David W. Look. *Disaster Management Programs for Historic Sites*, Digital Edition. San Francisco: Association for Preservation Technology, Western Chapter, and National Park Service, 2004.

Tandon, Aparna. "First Aid to Cultural Heritage in Times of Crisis: Handbook." Rome: International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), 2018.

Waller, Robert. "Risk Management Applied to Preventive Conservation." *Storage of Natural History Collections: A Preventive Conservation Approach*. New York: Society for the Preservation of Natural History Collections, 1995.

Walli, Amanda and Joan Bacharach. "Hantavirus Disease Health And Safety Update." *Conserve O Gram* 2/8. Washington, DC: National Park Service, 2014.

Walsh, Betty. "Salvage Of Water-Damaged Collections: Salvage At A Glance." *Conserve O Gram* 21/3. Washington, DC: National Park Service, 2002.

_____. "Salvage At A Glance, Part I: Paper Based Collections." *Conserve O Gram* 21/4. Washington, DC: National Park Service, 2002.

_____. "Salvage At A Glance, Part II: Non-Paper Based Archival Collections." *Conserve O Gram* 21/5. Washington, DC: National Park Service, 2002.

L. List of Figures

See also Appendix F, Figure F.2: NPS Checklist for Preservation and Protection of Museum Collections.

Museum Risk Assessment Worksheet (Excel) January 2022

(Note: Microsoft Edge users, please download file.)

MUSEUM MITIGATION ACTION PLAN (SAMPLE) (BLANK)

Park Name: _____ **Completed By:** _____
(Name, Title)

Mitigation Category	FMSS Information		Date Listed	Corrective Actions to be Completed	Mitigation Priority (Immediate / Intermediate / Long-Term)	Work Order / PMIS #	Individual(s) Responsible for Completing Corrective Action (Name, Title)	Date Completed
	Location (Number)	Location Description						
Building envelope								
Building utilities & systems								
Spaces storing collections								
Spaces exhibiting collections								
Collections								
Operational Procedures								

Figure 10.3. Museum Mitigation Action Plan (Sample) (Blank)

MUSEUM MITIGATION ACTION PLAN (SAMPLE) (COMPLETED)

Park Name: Beautiful Home National Historic Site **Completed By:** Marianne Kuratur, Curator
(Name, Title)

Mitigation Category	FMSS Information		Date Listed	Corrective Actions to be Completed	Mitigation Priority (Immediate / Intermediate / Long-Term)	Work Order / PMIS #	Individual(s) Responsible for Completing Corrective Action (Name, Title)	Date Completed
	Location (Number)	Location Description						
Building envelope	555555	Hilltop House	8/20/2020	Repair cracked window near north entrance.	Immediate	9081127	Chris Fixit, Facility Manager	9/1/2020
Building envelope	555555	Hilltop House	10/25/2020	Fix drainage near downspout footings.	Immediate	9082085	Chris Fixit, Facility Manager	10/30/2020
Building envelope	555556	Curatorial Facility	3/28/2020	Acquire new HVAC system.	Long-Term	9082006	Chris Fixit, Facility Manager	10/19/2020
Building envelope	555556	Curatorial Facility	11/13/2020	Repair building structural seals around windows, doors, etc.	Intermediate	N/A	Chris Fixit, Facility Manager	Scheduled for Spring 2021
Building utilities & systems	555556	Curatorial Facility	11/15/2020	Arrange for back-up power source for security, emergency lighting, and HVAC.	Intermediate	N/A	Marianne Kuratur, Curator Chris Fixit, Facility Manager	Scheduled for Spring 2021
Building utilities & systems	555556	Curatorial Facility, Room 1104	8/1/2020	Replace fire detection and suppression system.	Intermediate	9081203	Marianne Kuratur, Curator Chris Fixit, Facility Manager	9/5/2020
Spaces storing collections	555556	Curatorial Facility, Room 1105	9/14/2020	Bolt and brace storage cabinets to structural walls.	Immediate	9081298	Chris Fixit, Facility Manager	9/17/2020
Spaces exhibiting collections	555555	Hilltop House	7/13/2020	Install water alarms.	Intermediate	9081105	Chris Fixit, Facility Manager	8/8/2020
Operational procedures	555556	Curatorial Facility, Room 1106	10/22/2020	Store hazardous chemicals in labeled flammable liquid safety cabinets.	Intermediate	N/A	Marianne Kuratur, Curator Andrew Neat, Safety Officer	11/14/2020

Figure 10.3a. Museum Mitigation Action Plan (Sample) (Completed)

Record of the Decision Not to Implement Corrective Actions in a Structure Housing Collections

Park Name	
FMSS Location (Number)	FMSS Location Description
Number of Floors	Floor Area (Sq. Ft.)

Completed by: _____ Date: _____
(Print Name, Title)

Indicate if the building or structure is (Check all that apply):			
☐ Storage	☐ Work Room	☐ Preparation Area	☐ Research Room
☐ Exhibit Gallery	☐ Furnished Historic Structure		☐ Visitor Center
☐ Other			

Type of construction (concrete, wood, steel, masonry, etc.) for the following:	
Walls	
Floors	
Ceilings	
Roof	
Supporting Members	
Other	

List and describe proposed corrective actions identified in the Museum Mitigation Action Plan for this structure:

Indicate the rationale for ***not*** implementing proposed corrective actions in this structure:

Figure 10.3b. Record of the Decision Not to Implement Corrective Actions in a Structure Housing Collections

[*Beautiful Home National Historic Site (BEHO)*]

MUSEUM COLLECTIONS EMERGENCY OPERATIONS PLAN (SAMPLE)*

Recommended by Curator	Name (Print)	Signature	Date
Concurred by Chief Ranger	Name (Print)	Signature	Date
Concurred by Park Emergency Operations Coordinator	Name (Print)	Signature	Date
Concurred by Park Facility Manager	Name (Print)	Signature	Date
Concurred by Regional Curator	Name (Print)	Signature	Date
Approved by Superintendent	Name (Print)	Signature	Date

*Customize this plan as needed.

Figure 10.4. Museum Collections Emergency Operations Plan (Sample)

Record of Changes to the Museum Collections Emergency Operations Plan

The following information in the MCEOP has been updated:

Page	Section	Change	Made by, Title	Date
3	Section E	New MCEOP team member added.	Marianne Kuratur, Museum Curator	1/18/2020
5	Section I	Appended updated list of emergency vendors and sources of assistance	Marianne Kuratur, Museum Curator	2/15/2020

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

[*BEHO*] Museum Collections Emergency Operations Plan

Title Page

Record of Changes to the Museum Collections Emergency Operations Plan

TABLE OF CONTENTS

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

[*BEHO*] MUSEUM COLLECTIONS EMERGENCY OPERATIONS PLAN

This Museum Collections Emergency Operations Plan (MCEOP) provides guidance for responding to emergency incidents that impact life safety and museum collections at [*Beautiful Home National Historic Site (BEHO)*]. It includes Emergency Response Steps, First Priorities for Relocation and Salvage, emergency contact, vendor and sources of assistance, and supply and equipment lists, floor plans, access and key control policies and procedures, designated secure and stable location, and salvage procedures.

This MCEOP has been appended to the [*BEHO*] park Emergency Operations Plan (EOP). It is reviewed annually and updated every five years. It is activated when the Incident Command System (ICS) becomes operational.

A. MUSEUM EMERGENCY PLANNING STANDARDS AND POLICIES

1. DOI and NPS Museum Emergency Planning Policies

This MCEOP is developed in accordance with:

411 DM 1: Identifying and Managing Museum Property 1.11.B.3: Emergency Management Plan (EMP): "… identifies risks and vulnerabilities to museum property from events such as fires, earthquakes, floods, tornadoes, or civil disturbances. The EMP pertains to each bureau/office facility and non-bureau facility housing museum property. The EMP must be reviewed every 5 years and updated, if necessary."

900 DM 1: Emergency Management Program 1.3.A: Policy "All Bureaus/Offices must provide necessary resources to prevent, protect against, mitigate the effects of, respond to, and recover from an incident; declared Emergency and/or Major Disaster…"

NPS Management Policies 5.3.1.1: Emergency Management: "Measures to protect or rescue cultural resources in the event of an emergency, disaster, or fire will be developed as part of a park's emergency operations and fire management planning processes."

NPS-28: Cultural Resource Management Guideline 9.D: Standards: "Each park and center has identified threats to the security and protection of its museum collection and has taken appropriate measures to deal with them, including emergency planning."

NPS Director's Order 24.4.3.10 Emergency Operation: "Park superintendents, center managers, and others who manage collections (with the assistance of museum management staff) have the following responsibilities:…Approve, keep current, and implement a Museum Collections Emergency Operations Plan, as part of the park's Emergency Operations Plan and consistent with the National Incident Management System identifying museum collection vulnerabilities to events (such as fire, earthquakes, and floods) and responses that will protect resources without endangering human health and safety. Ensure that staff trains, practices, and prepares for emergency response."

2. NPS Museum Emergency Planning and Preparedness Standards

1. Develop, approve, keep current, and implement a Museum Collections Emergency Operations Plan (MCEOP) as part of the park Emergency Operations Plan in accordance with Director's Order (DO) 24.4.3.10: Emergency Operation, that addresses museum collection requirements for emergency protection, response, relocation, and salvage. Review the MCEOP annually and update every five years.
2. Develop Emergency Response Steps for different emergency incidents in the MCEOP.
3. Complete the NPS Checklist for Preservation and Protection of Museum Collections to identify and document hazards to and vulnerabilities of museum collections and structures and spaces housing collections in accordance with DO 24.4.3.21: Checklist. Review and submit to the National Catalog annually in accordance with DO 24.5.2: Checklist.
4. Develop a Museum Mitigation Action Plan that includes corrective actions to be implemented to remove or reduce hazards and vulnerabilities identified in risk assessments. Review annually and update every five years.
5. Mitigate hazards and vulnerabilities identified in the Museum Mitigation Action Plan ***or*** relocate objects at risk to a designated secure and stable location.

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

B. INCIDENT COMMAND SYSTEM (ICS)

The superintendent activates the Incident Command System (ICS). In accordance with Director's Order 55.3.12: Chain of Command, "During emergencies or special events, the chain of command still exists. However, any level of the chain may delegate authority to an Incident Commander or Area Commander."

The MCEOP team leader, as a resource advisor, will familiarize the Incident Commander (IC) or designee with the MCEOP and the needs of the collection.

C. COLLECTIONS AND STRUCTURES HOUSING COLLECTIONS OVERVIEW

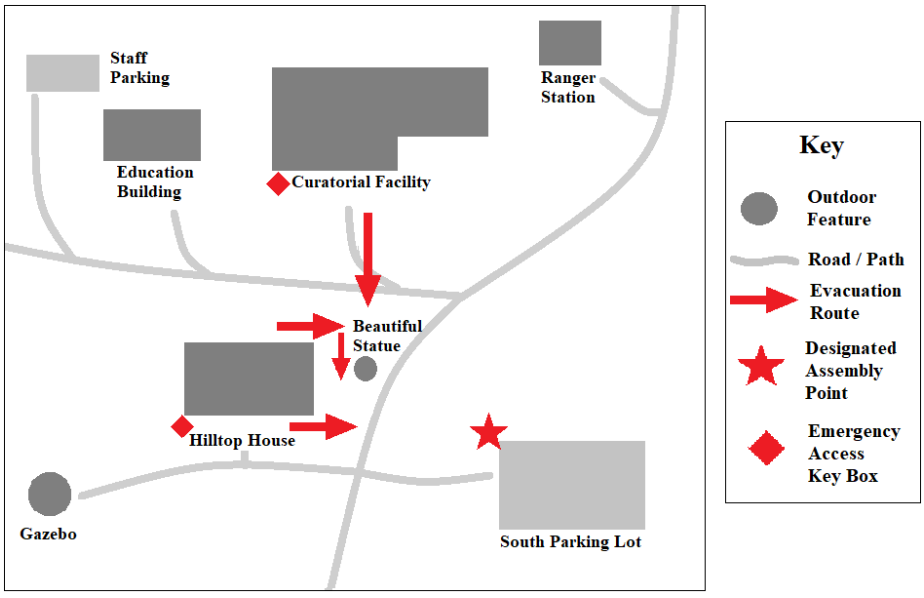
Structures housing collections at [*BEHO*] include [*Hilltop House, a furnished historic structure built in 1898,*] and [*a purpose-built Curatorial Facility*] (see Site Map). The [*BEHO*] collection numbers [*16,000 objects,*] including [*artwork, archeology, history, furnishings, historic photographs, and archival items original to the site.*]

The [***BEHO***] collections and museum records are housed in the [*Curatorial Facility*], with [*550 objects*] on exhibit in [*Hilltop House.*] [*Emergency access key boxes are located in front of Hilltop House and the Curatorial Facility.*] A museum-quality photocopy of the accession book and digital scans of the accession book, accession documents, Edgar Beautiful diary, backup copies of ICMS records, and digital collection images are housed in [*the Superintendent's office*], off-site at [*RELO Park*], and with the regional curator as of [*Oct 13, 2019.*]

[***Hilltop House***] (FMSS Location # [*77777*], [*National Register of Historic Places (#99999999)*]), built in [*1898, is the home of Edgar and Augusta Beautiful and family.*] It is a furnished [*two*] story structure with a [*stone*] foundation and a [*slate shingle*] roof. There are [*two*] exterior doors on the [*ground floor.*] Each floor has [*four single pane shuttered sash*] windows. Floors are [*original hard wood.*] Doorways to furnished rooms have [*plexiglass barriers installed.*] The building is equipped with [*intrusion detection, fire detection, and wet pipe fire sprinkler*] systems. Hilltop House is located [*two miles from the town center.*] Public access to Hilltop House is [*by scheduled ranger-led tour.*]

The [***Curatorial Facility***] (FMSS Location# [*77776*]), located [*a quarter mile from Hilltop House*], is a [*one*]-story, [*purpose-built concrete block structure*] with [*two*] exterior doors built in [*1993.*] It includes [*the curatorial offices, work and research spaces, and a supply room*] and [*is open to researchers by appointment.*]

[*Park administration*], including the Superintendent's office, is located [*in the town center.*]



BEHO Site Map

2

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

D. RISK ASSESSMENT

1. Risk Assessment Documents on File

The following risk assessment documents are on file in the [*curator's office in the Curatorial Facility*]:

- NPS Checklist for Preservation and Protection of Museum Collections
- Risk Assessment Worksheet
- First Priorities for Relocation and Salvage
- Object Assessment
- Museum Mitigation Action Plan
- Physical Security Assessment for structures housing collections

A paper copy of the current Museum Mitigation Action Plan is on file in the [*facility manager's office and emergency operations coordinator's office.*]

2. Risks to Collections and Structures Housing Collections

The park is at high risk from the following emergency incidents:

- [*Fire: Hilltop House's historic wood furnishings increase susceptibility to damage from structural fire.*
- *Severe Weather: The park is located in a hurricane zone.*
- *Water Damage: The original copper pipes in Hilltop House are prone to pinhole leaks.*]

E. MCEOP TEAM RESPONSIBILITIES

MCEOP team leader is on call 24/7 to respond to emergency incidents affecting collections and structures housing collections and will, in collaboration with the MCEOP team:

- Develop and implement the MCEOP, review annually, and update every five years.
- Append the MCEOP to the park EOP, in collaboration with the emergency operations coordinator.
- Develop Emergency Response Steps.
- Develop emergency contact, vendor and sources of assistance, and supply and equipment lists.
- Select MCEOP team members, assign responsibilities, and schedule MCEOP meetings.
- Determine object First Priorities for Relocation and Salvage.
- Arrange for and coordinate:
  - designated secure and stable location(s) for relocated objects
  - emergency supplies, equipment, vendor and contractor agreements, purchases, and services
  - relocation and salvage activities
  - documentation of museum emergency planning, response, and salvage activities
  - training with the emergency operations coordinator and safety officer
  - assistance from nearby parks, local museums, and conservators
- Brief superintendent and emergency operations coordinator on museum program needs.

MCEOP team members perform relocation and salvage activities, and include:

Emergency registrar manages response and salvage documentation, including labeling, salvage activities, and supplies/equipment orders and availability.

Salvage coordinator prioritizes objects for salvage and facilitates packing and relocation.

Security coordinator ensures collections security and works with the facility manager and emergency operations coordinator on utility and service recovery.

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

F. FIRST PRIORITIES FOR RELOCATION AND SALVAGE

1. First Priority Objects for Relocation and Salvage

First Priority objects on exhibit in [*Hilltop House*] and in storage in the [*Curatorial Facility*] are identified in the list and floor plans on [*pages 7 - 8*]. Storage cabinets containing First Priority objects are identified with red tags.

2. Restricting First Priority Information

The MCEOP team leader will:

- Maintain the MCEOP (paper copy) with the First Priority list and floor plan(s) in a secure, locked cabinet in the curatorial office, and limit access to electronic copies.
- Distribute MCEOP copies with the First Priority list and floor plan(s) to the superintendent and regional curator that must be secured in a locked cabinet.
- Provide copies of the MCEOP with the First Priority list and floor plan(s) ***redacted*** to the emergency operations coordinator and safety officer.
- Provide MCEOP team members with copies of the MCEOP with the First Priority list and floor plan(s) ***redacted***, and distribute First Priority list and floor plan(s) as needed.
- Maintain the MCEOP in a loose-leaf binder. Mark pages with First Priority information with "Sensitive Information: Do Not Distribute."

G. EMERGENCY RESPONSE

1. Evacuation Plan

[*Attach*] a copy of the Evacuation Plan for [*Hilltop House*] and the [*Curatorial Facility*] from the park Occupant Emergency Plan (OEP).

2. Emergency Response Steps

[*Attach*] the following Emergency Response Steps:

Type of Emergency Response Step	Figure Number
Active Shooter	10.5
Disruptive Individual	10.6
Earthquake	10.7
Explosion	10.8
Fire	10.9
Hazardous Materials Spill, Odor, and Gas Leak	10.10
Medical Emergency	10.11
Mold Outbreak	10.12
Power Outage	10.13
Severe Weather	10.14
Suspicious Package or Item	10.15
Suspicious Person and Vandalism	10.16
Threat (Threatening Call or Bomb Threat)	10.17
Volcanic Eruption	10.18
Water Leak and Flood	10.19

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

3. Designated Assembly Point

The designated assembly point is the [*South Parking Lot.*] See Site Map.

H. SECURITY

1. Designated Secure and Stable Location for Relocated Objects

The designated secure and stable location for relocated objects is [*RELO Park.*]

2. Access and Key Control Policies and Procedures

The curator develops and implements access and key control policies and procedures and maintains keys and keycards for [*Hilltop House*] and the [*Curatorial Facility*], including cabinets and exhibit cases, and the salvage area. The curator maintains a sign-in log for the salvage area.

[*Attach*] list of all individuals with keys, key cards, or security system access codes for [*Hilltop House*], the [*Curatorial Facility*], and the salvage area, including structures, spaces, and room(s) to which they have access.

I. EMERGENCY CONTACT INFORMATION

1. Emergency Contact List

[*Attach*] Emergency Contact List (Figure 10.21).

2. Vendor and Sources of Assistance List

[*Attach*] Emergency Vendor and Sources of Assistance List (Figure 10.22).

J. EMERGENCY EQUIPMENT, SERVICES, AND SUPPLIES

1. Utility and Mechanical Equipment Shut-Offs

[*Attach*] list of utilities and mechanical equipment, including electrical, cooling, HVAC, fire protection, and security systems, with shut-off locations and responsible individual(s).

2. Emergency Supplies and Equipment

[*Attach*] list of emergency supplies and equipment (Figure 10.23).

K. SALVAGE PROCEDURES

Quickly and safely relocate affected objects in accordance with the First Priority list to a designated secure and stable location outside the impacted area. *Relocate objects **only** when a greater danger is posed by leaving them in storage or on exhibit.*

[*Attach*] Salvage Procedures (Figure 10.24) to this plan, including: Before Salvage, Preparing the Salvage Area, General Salvage Procedures, Mold, Water Damage to Objects, and Water Damage to Spaces Housing Collections.

L. POST-EMERGENCY CRITIQUE

[*Attach*] the Post-Emergency Critique (Figure 10.26), completed within one month of the emergency incident.

M. MCEOP UPDATE AND REVIEW

The MCEOP is reviewed annually and updated every five years by the MCEOP team leader in collaboration with the MCEOP team. This MCEOP is also reviewed and updated after each major emergency incident, change in the MCEOP team leader, addition of a new or renovated structure or space to house collections, large acquisition, new exhibit, when new risks are identified, or when entering into new cooperative relationships with emergency responders.

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

N. LIST OF FIGURES

[*Attach*] the following figures:

First Priority Object List for Relocation and Salvage (***Restricted distribution***)
Floor Plan: Curatorial Facility First Priorities for Relocation and Salvage (***Restricted distribution***)
Floor Plan: Hilltop House First Priorities for Relocation and Salvage (***Restricted distribution***)
Floor Plan: Curatorial Facility Emergency Supplies and Utilities
Floor Plan: Hilltop House Emergency Supplies and Utilities
Floor Plan: Curatorial Facility Evacuation Route
Floor Plan: Hilltop House Evacuation Route

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

FIRST PRIORITY OBJECT LIST FOR RELOCATION* AND SALVAGE

RESTRICTED INFORMATION
Distribute ONLY to the superintendent, MCEOP team leader, and regional curator.
Remove this page from other copies of the MCEOP.

First Priority Objects for Relocation and Salvage			
Catalog Number	**Object Name**	**Room**	**Location**
N/A	*Accession Book†*	*Curatorial Facility Room 1106*	*Fire-Resistive Cabinet 2, Shelf 1*
BEHO 45, BEHO 237	*Navajo Rugs*	*Curatorial Facility Room 1105*	*North Wall, Rolled Storage, Rolls C1 and C2*
BEHO 1645, BEHO 1723	*Type Specimens*	*Curatorial Facility Room 1105*	*East Wall, Cabinet A3, Shelves 3 and 4*
BEHO 124	*Washington Letter*	*Curatorial Facility Room 1105*	*South Wall, Cabinet B5, Shelf 4*
BEHO 97	*Buffalo Hide Tipi*	*Curatorial Facility Room 1105*	*South Wall, Cabinet C6, Shelf 2*
BEHO 3	*Edgar Beautiful Diary*	*Hilltop House, Master Bedroom, Second Floor*	*West side of room, on end table next to bed*
BEHO 5	*Portrait of Augusta Beautiful*	*Hilltop House, Library, First Floor*	*East wall, hanging in center of wall parallel with entrance*

*First Priority objects are to be relocated to [*RELO Park*] in the event of an emergency.

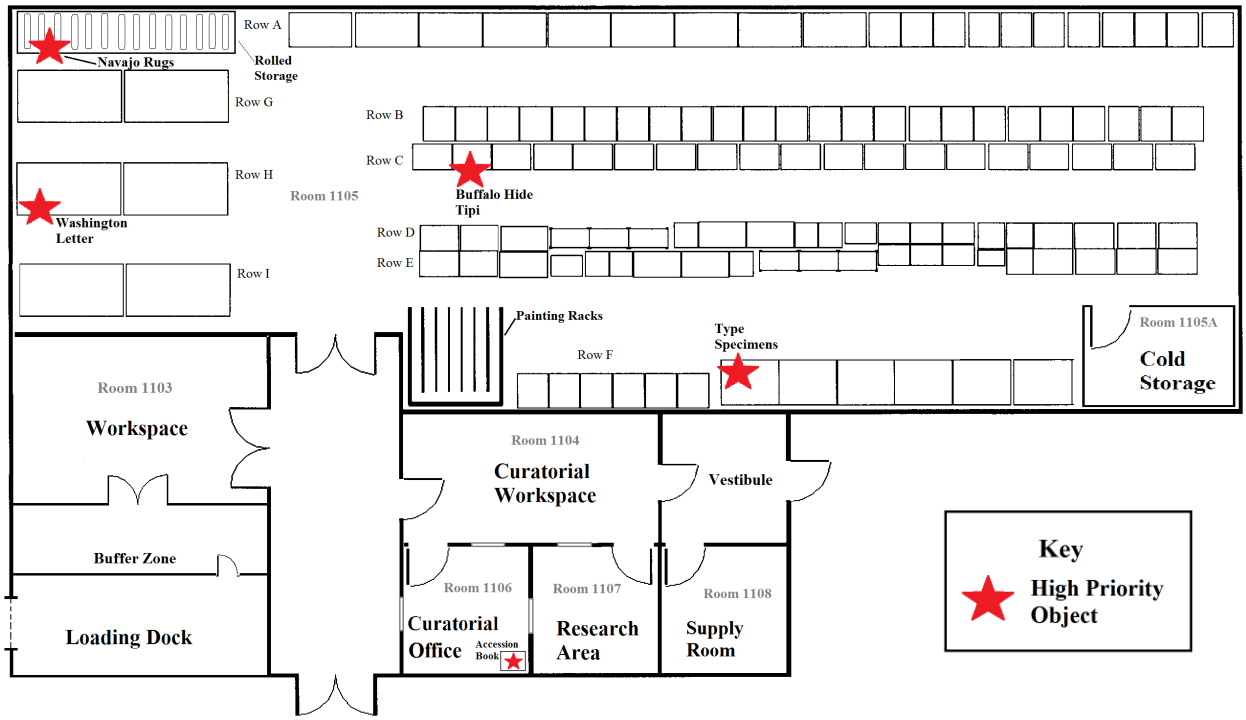
†A museum-quality photocopy of the accession book and a digital scan of the accession book and documents were deposited in the [*Superintendent's office*] and with the regional curator on [*Oct 13, 2019.*] A digital scan of the accession book is housed off-site at [*RELO Park.*]

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

RESTRICTED INFORMATION

Distribute ONLY to the superintendent, MCEOP team leader, and regional curator. Remove this page from other copies of the MCEOP.

Floor Plan: CURATORIAL FACILITY FIRST PRIORITIES FOR RELOCATION AND SALVAGE



Floor Plan: HILLTOP HOUSE FIRST PRIORITIES FOR RELOCATION AND SALVAGE

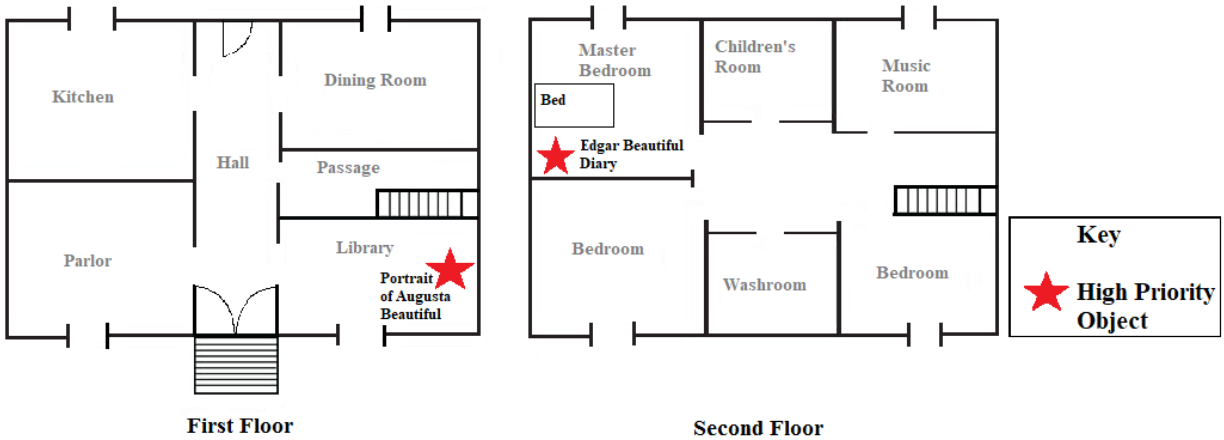


Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

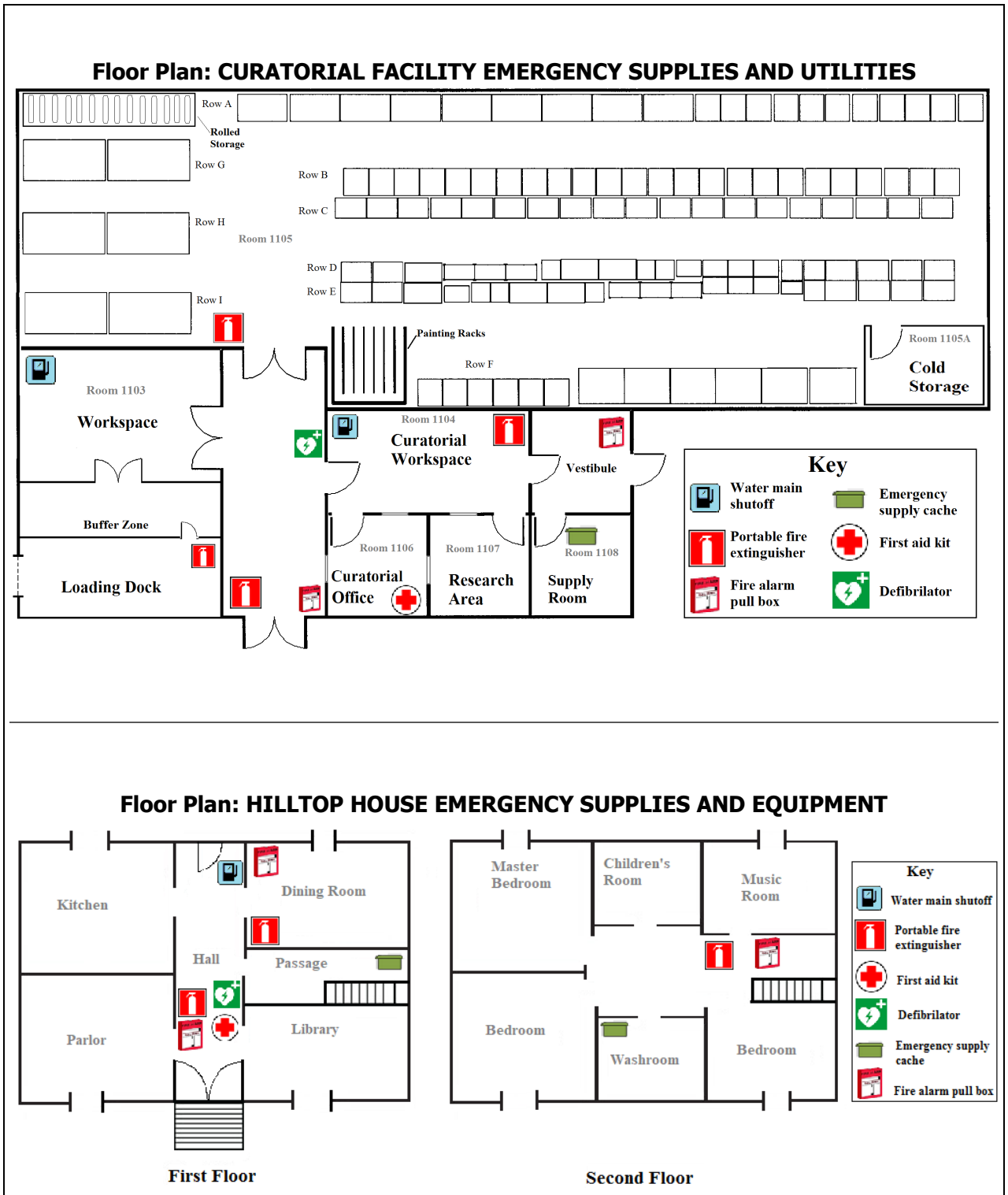
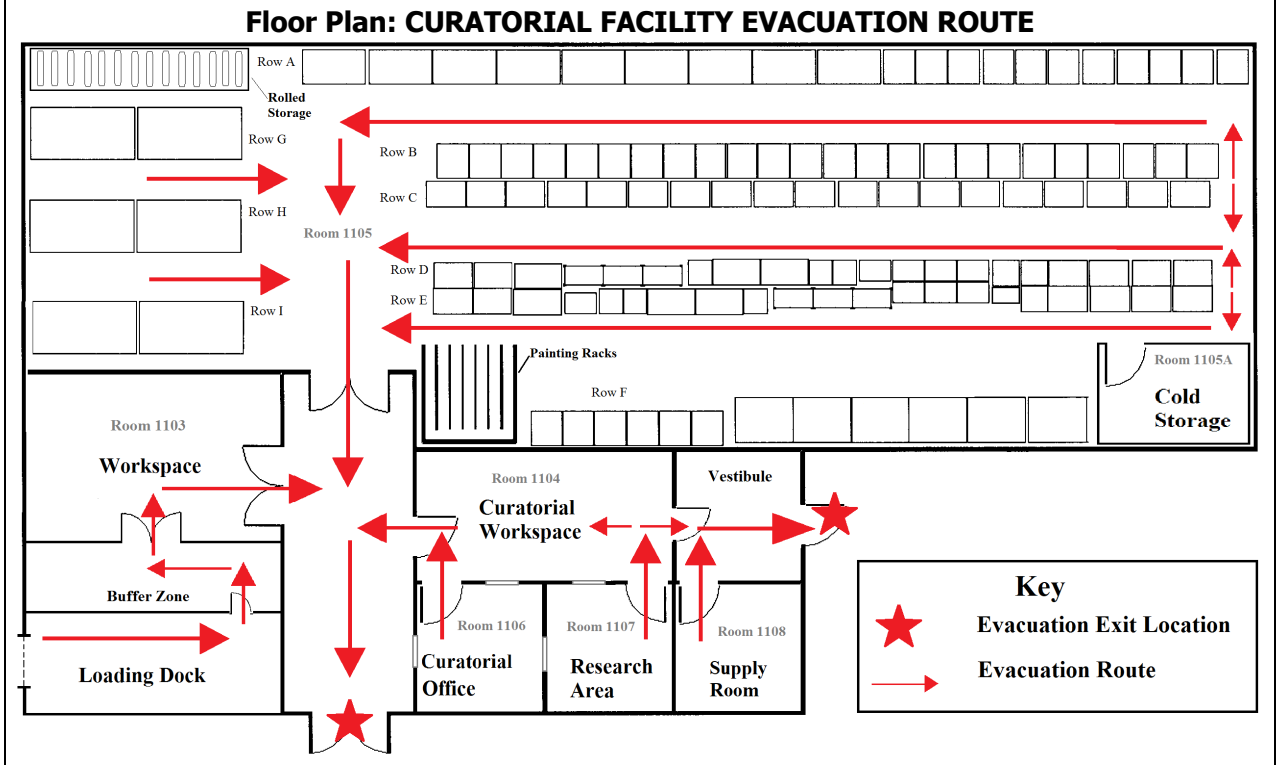
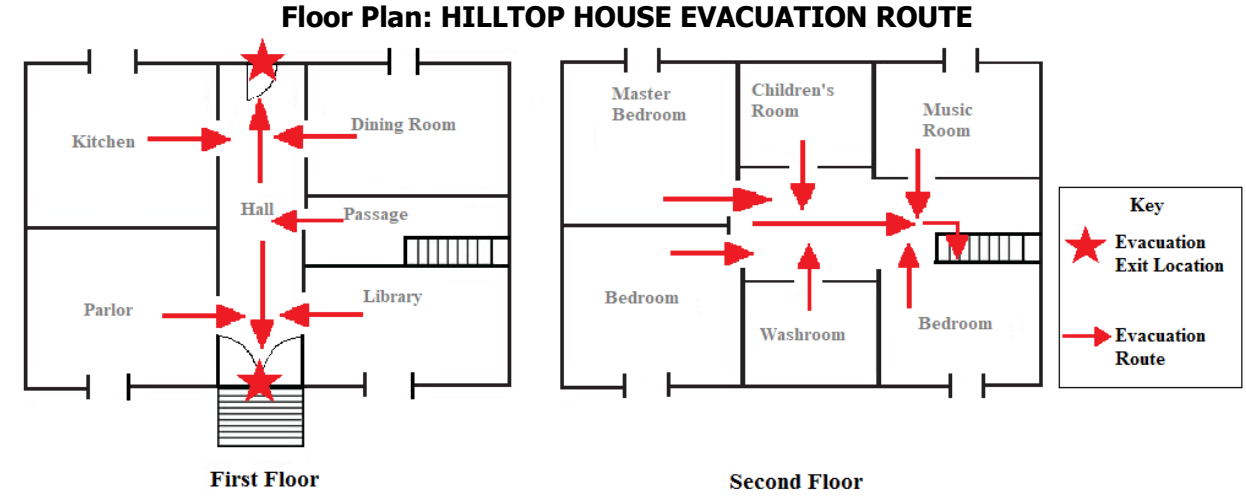


Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)





Meet at the designated assembly point at the [*South Parking Lot.*]

Figure 10.4. Museum Collections Emergency Operations Plan (Sample) (continued)

EMERGENCY RESPONSE STEPS

- Active Shooter
  Figure 10.5
- Disruptive Individual
  Figure 10.6
- Earthquake
  Figure 10.7
- Explosion
  Figure 10.8
- Fire
  Figure 10.9
- Hazardous Materials Spill, Odor, and Gas Leak
  Figure 10.10
- Medical Emergency
  Figure 10.11
- Mold Outbreak
  See Figure 10.12
- Power Outage
  Figure 10.13
- Severe Weather
  Figure 10.14
- Suspicious Package or Item
  Figure 10.15
- Suspicious Person and Vandalism
  Figure 10.16
- Threat (Threatening Call or Bomb Threat)
  Figure 10.17
- Volcanic Eruption
  Figure 10.18
- Water Leak and Flood
  Figure 10.19

Emergency Response Steps

ACTIVE SHOOTER
EMERGENCY RESPONSE STEPS

COPING
WITH AN ACTIVE SHOOTER SITUATION

- Be aware of your environment and any possible dangers
- Take note of the two nearest exits in any facility you visit
- If you are in an office, stay there and secure the door
- Attempt to take the active shooter down as a last resort

Contact your building management or human resources department for more information and training on active shooter response in your workplace.

PROFILE
OF AN ACTIVE SHOOTER

An active shooter is an individual actively engaged in killing or attempting to kill people in a confined and populated area, typically through the use of firearms.

CHARACTERISTICS
OF AN ACTIVE SHOOTER SITUATION

- Victims are selected at random
- The event is unpredictable and evolves quickly
- Law enforcement is usually required to end an active shooter situation

CALL 911 WHEN IT IS SAFE TO DO SO

HOW TO RESPOND
WHEN AN ACTIVE SHOOTER IS IN YOUR VICINITY

1. RUN
- Have an escape route and plan in mind
- Leave your belongings behind
- Keep your hands visible

2. HIDE
- Hide in an area out of the shooter's view
- Block entry to your hiding place and lock the doors
- Silence your cell phone and/or pager

3. FIGHT
- As a last resort and only when your life is in imminent danger
- Attempt to incapacitate the shooter
- Act with physical aggression and throw items at the active shooter

CALL 911 WHEN IT IS SAFE TO DO SO

HOW TO RESPOND
WHEN LAW ENFORCEMENT ARRIVES

- Remain calm and follow instructions
- Put down any items in your hands (i.e., bags, jackets)
- Raise hands and spread fingers
- Keep hands visible at all times
- Avoid quick movements toward officers such as holding on to them for safety
- Avoid pointing, screaming or yelling
- Do not stop to ask officers for help or direction when evacuating

INFORMATION
YOU SHOULD PROVIDE TO LAW ENFORCEMENT OR 911 OPERATOR

- Location of the active shooter
- Number of shooters
- Physical description of shooters
- Number and type of weapons held by shooters
- Number of potential victims at the location

Reproduced from: Department of Homeland Security, "Active Shooter Pocket Card." 2017. https://www.dhs.gov/sites/default/files/publications/active-shooter-pocket-card-508.pdf.

Figure 10.5. Active Shooter Emergency Response Steps

DISRUPTIVE INDIVIDUAL
EMERGENCY RESPONSE STEPS

- Call park dispatch and 911.
- Stay calm.
- Be courteous and attentive.
- Direct staff and visitors to move away from the area.
- Stay within sight of the disruptive individual until law enforcement/ranger arrives.
- Do not jeopardize your personal safety.
- Be prepared to describe the individual (age, appearance, gender, etc.).

Figure 10.6. Disruptive Individual Emergency Response Steps

EARTHQUAKE
EMERGENCY RESPONSE STEPS

During the Earthquake

- Stay inside.
- Shelter under the nearest sturdy desk or table.
- **DROP, COVER, then HOLD ON**
  - drop to hands and knees
  - cover head and neck
  - hold on to sturdy desk or table until shaking stops
- Move away from bookshelves, cases, cabinets, exterior walls, overhead light fixtures, and windows.
- *Do not:*
  - shelter under doorways
  - rush outside
  - use elevators
- If there is no cover, drop to the floor against an interior wall and cover head and neck.
- Shelter in Place until cleared for evacuation.

After Cleared for Evacuation

- Be prepared for aftershocks and tremors.
- Call 911 and park dispatch.
- Evacuate the building.
- *Do not* use elevators.
- Once outside, move away from the building.
- Avoid falling debris, electrical lines, standing water, broken water pipes, and fuel leaks.
- Meet at the designated assembly point.
- Do not re-enter the building until cleared for re-entry.

Figure 10.7. Earthquake Emergency Response Steps

EXPLOSION
EMERGENCY RESPONSE STEPS

Bomb or Explosion Inside the Building

- Take cover under a sturdy desk or table away from windows until debris stops falling.
- Call 911 and park dispatch.
- Evacuate the building.
- *Do not* use:
  - elevators
  - matches, lighters, and other open flames
- Check for fire and other hazards.
- Cover nose and mouth with a wet cloth as needed.
- Stay low if there is smoke.
- Meet at the designated assembly point.
- Do not re-enter the building until cleared.

If Trapped Inside the Building

- Use a flashlight or tap on pipes to signal location.
- Shout only as a last resort to avoid inhaling dangerous dust.

Bomb or Explosion Outside the Building

- Avoid windows, doors, and exterior walls.
- Shelter in Place in the building until cleared.

Figure 10.8. Explosion Emergency Response Steps

FIRE
EMERGENCY RESPONSE STEPS

- Activate the fire alarm.
- Call 911 and park dispatch.
- Use a portable fire extinguisher to put out a small fire ***only*** if properly trained.
- ***Do not*** attempt to put out a nitrate or plastics fire.
- Do not jeopardize your personal safety.
- Evacuate the area immediately.
- If smoke is present, keep close to the ground.
- Cover nose and mouth with a wet cloth as needed.
- ***Do not:***
  - use elevators
  - open windows
- Close doors when evacuating to confine the fire.
- If clothing catches fire, **STOP, DROP, and ROLL**.
- Meet at the designated assembly point.

Figure 10.9. Fire Emergency Response Steps

HAZARDOUS MATERIALS SPILL, ODOR, AND GAS LEAK EMERGENCY RESPONSE STEPS

Hazardous Materials Spill (Liquid or Powder)

- Call 911 and park dispatch.
- *Do not* try to clean the spill.
- Cover the spilled material.
- Remove affected clothing using gloves if splashed.
- Wash hands with soap and water.
- Restrict access to the contaminated area.
- Leave the room and close the door.
- Evacuate the building.
- Meet at the designated assembly point.

Exposure to Blood, Bodily Fluids, or Infectious Material

- Assume all blood or bodily fluids carry blood-borne pathogens.
- Avoid coming into contact with blood and bodily fluids.
- If exposed, wash affected area(s) with soap and water immediately.
- Call 911 and park dispatch.
- Restrict access to the contaminated area.
- Await first responders.

Odor or Gas Leak

- Open a window if there is hissing or a gas odor.
- Call 911 and park dispatch.
- *Do not* turn electrical appliances on or off to prevent sparking.
- Evacuate the building immediately.
- Meet at the designated assembly point.
- Notify the facility manager to turn off the gas main valve.

Figure 10.10. Hazardous Materials Spill, Odor, and Gas Leak Emergency Response Steps)

MEDICAL EMERGENCY
EMERGENCY RESPONSE STEPS

- Call 911 and park dispatch.
- Be prepared to describe the nature and location of the medical emergency.
- Keep the injured person calm and indicate help is on the way.
- Provide care ***only*** if trained to do so.
- Remain with the injured person.
- Keep the area clear.
- *Do not:*
  - move the injured person
  - give the injured person anything to eat or drink
  - attempt to administer first aid without consent
- Arrange to meet first responders.

Figure 10.11. Medical Emergency Response Steps

MOLD OUTBREAK
EMERGENCY RESPONSE STEPS

Mold on Objects

- Wear gloves and protective clothing.
- Be aware of potential allergic reactions to all molds.
- Isolate affected objects:
  - in a room with low relative humidity and temperature
  - with separate air handling from other collections
- Remove all sources of moisture or excess humidity within 48 hours.
- Identify mold in consultation with a specialist.
- Follow salvage procedures for mold.

Large-scale Mold Outbreak in Spaces Housing Collections

- Evacuate the contaminated area.
- Restrict access to the contaminated area.
- Contact:
  - park safety officer and facility manager
  - specialist to identify the mold
  - professional abatement team
- *Do not:*
  - touch contaminated materials
  - re-enter the area until cleared

Figure 10.12. Mold Outbreak Emergency Response Steps

POWER OUTAGE
EMERGENCY RESPONSE STEPS

- Report the outage to the facility manager and park dispatch.
- Ensure continued security coverage and fire protection.
- Keep HVAC operational using back-up power systems.
- Use a flashlight.
- Tape refrigerators, freezers, and cold storage units shut and:
  - turn units to the coldest settings
  - seal with polyethylene sheeting and duct tape
  - mark with "Do not open" and name and date
- ***Do not*** use matches, lighters, and other open flames.
- Evacuate the building and:
  - move single file with caution along the evacuation route
  - close doors and windows en route
  - meet at the designated assembly point
- Secure the building.
- Restrict access until regular services and security are restored.

Figure 10.13. Power Outage Emergency Response Steps

SEVERE WEATHER
EMERGENCY RESPONSE STEPS

Hurricane

- Monitor National Weather Service and other advisories.
- Check battery-powered equipment, back-up power sources, and emergency exit lights.
- Ensure collections are safely stored and secured.
- Cover and secure objects with polyethylene sheeting or tarp.
- Relocate First Priority objects to the designated secure and stable location.
- Tape refrigerators, freezers, and cold storage units shut and:
  - turn units to the coldest settings
  - seal with polyethylene sheeting and duct tape
  - mark with "Do not open" and name and date
- Back up and secure electronic museum records in a secure and stable location.
- Close and secure doors, windows, and shutters, and cover with boards.
- Brace exterior doors and place sandbags in front of doors.
- Shut down and unplug electrical appliances.
- Evacuate the building.
- Meet at the designated hurricane assembly point.
- Shelter in Place in a windowless interior room above ground level if evacuation is not possible.

Thunderstorm

- With advance notice, move objects away from windows and doors.
- Close and secure windows and doors.
- Disconnect electrical appliances.
- *Do not* use landline telephones or electrical equipment.
- Avoid metal structural elements, outlets, faucets and sinks.
- Use battery operated equipment.
- Remain indoors.
- Shelter in Place in a windowless interior room until the storm passes.

Tornado or Wind Storm

- With advance notice, move objects away from windows and doors.
- Avoid doors, outside walls, and windows.
- Shelter in Place in the basement or windowless interior room on the lowest level.
- Take cover under a sturdy desk or table until cleared.
- If stranded on an upper floor, go to a closet or windowless hallway.

Figure 10.14. Severe Weather Emergency Response Steps

SUSPICIOUS PACKAGE OR ITEM
EMERGENCY RESPONSE STEPS

- Be suspicious of a package or item displaying:
  - excessive postage weight
  - excessive tape or string
  - foreign mail, airmail, or special delivery
  - hand written/poorly typed address or no return address
  - incorrect title or title with no name
  - markings such as "Confidential" without a return address
  - misspellings of common words
  - oily stains or discoloration
  - protruding wires or tinfoil
  - rigid, lop-sided, or uneven envelope
  - ticking or buzzing
  - vapors or odors
- *Do not:*
  - handle, open, or move the package/item
  - activate fire alarm pull bars to avoid activating explosive devices
  - use a cell phone or radio to avoid activating explosive devices
- Restrict access to the area and package/item.
- Evacuate the building.
- Move to a safe area (100 feet away) before calling 911 and park dispatch.
- Meet at the designated assembly point.
- Be alert for a possible second explosive device.

Figure 10.15. Suspicious Package or Item Emergency Response Steps

SUSPICIOUS PERSON AND VANDALISM
EMERGENCY RESPONSE STEPS

Suspicious Person

- Call 911 and park dispatch.
- *Do not* engage the suspicious person.
- Keep a safe distance.
- Evacuate occupants using the nearest exit.
- Meet at the designated assembly point.
- Be prepared to describe the individual, vehicle, license plate, and direction of escape.

Vandalism

- *Do not* interfere with or physically restrain the vandal.
- Call 911 and park dispatch.
- Be prepared to describe the individual, vehicle, license plate, and direction of escape.
- Do not touch or move anything until cleared by law enforcement.
- Gather vandalized museum object(s), label broken pieces, and keep together in storage.

Figure 10.16. Suspicious Person and Vandalism Emergency Response Steps

THREAT (THREATENING CALL OR BOMB THREAT)
EMERGENCY RESPONSE STEPS

- Listen carefully.
- Do not interrupt the caller.
- Write down what the caller says in their own words.
- Make notes on:
  - age, sex, accent, tone of voice
  - background noises
  - location and timing of threat or bomb
  - reason for threat or bomb
- Stay on the phone as long as possible.
- Discretely signal a coworker to call 911 and park dispatch.
- Only notify employees directly involved to prevent panic.
- For bomb threats, ***do not:***
  - activate fire alarm pull bars to avoid activating explosive devices
  - use a cell phone or radio to avoid activating explosive devices
- Evacuate if instructed to do so.*
- Meet at the designated assembly point.

*Note: Evacuations may move people to locations that could become targets for active shooter situations.

Figure 10.17. Threat (Threatening Call or Bomb Threat) Emergency Response Steps

VOLCANIC ERUPTION
EMERGENCY RESPONSE STEPS

- Monitor National Weather Service and other advisories.
- Seal cabinet doors with tape.
- Cover storage cabinets, exhibit cases, and furnishings with polyethylene sheeting or tarps.
- Move objects away from doors and windows.
- Cover freestanding objects with polyethylene sheeting.
- Work with the facility manager to:
  - shut down the HVAC system to prevent clogging
  - tape HVAC ducts and vents shut
  - place coverings over chimneys
- ***Do not*** shut off the intrusion detection and alarm and automatic fire protection systems.
- Cover windows with boards and/or plastic sheeting.
- Seal exterior doors with tape.
- Evacuate the building immediately.
- Meet at the designated assembly point.
- When evacuating, stay on high ground where possible.
- Avoid areas where lava or mudslides can accumulate.

Figure 10.18. Volcanic Eruption Emergency Response Steps

WATER LEAK AND FLOOD
EMERGENCY RESPONSE STEPS

- Call park dispatch, 911, and the facility manager.
- Stop the flow of water immediately if safe to do so.
- Determine which objects are in jeopardy.
- Move First Priority and small objects out of the affected area to a designated secure and stable location.
- Cover the following with polyethylene sheeting or tarps:
  - freestanding non-moveable objects
  - storage cabinets and exhibit cases
- *Avoid:*
  - flooded spaces and standing water
  - appliances or outlets near the leak or water
- Restrict access until the leak or flood has been safely controlled.
- Evacuate if danger is imminent.
- Meet at the designated assembly point.

Figure 10.19. Water Leak and Flood Emergency Response Steps

EMERGENCY CONTACT LIST (SAMPLE)

Park Dispatch ..... **[*5999*]**
Emergency **911**

Museum:

MCEOP Team:
Supervisory museum curator (MCEOP team leader) ..... [*5555*]
Museum collections manager (Emergency registrar) ..... [*5556*]
Museum technician (Salvage coordinator) ..... [*5557*]
Museum specialist (Security coordinator) ..... [*5546*]

Other museum staff:
Museum technician ..... [*5550*]
Intern ..... [*5560*]

Park:
Facility manager ..... [*5553*]
Emergency operations coordinator ..... [*5552*]
Structural Fire Coordinator ..... [*5559*]
Fire Management Officer ..... [*5558*]
Safety officer ..... [*5542*]
Chief Ranger ..... [*5548*]
Law enforcement ..... [*5540*]
Superintendent ..... [*5551*]
Administrative Officer ..... [*5533*]
Information technology ..... [*5543*]

Region / Center:
Regional curator ..... [*(555) 555-9991*]
Conservator ..... [*(555) 555-9992*]
Historical architect advisor ..... [*(555) 555-9993*]
Cultural landscape specialist ..... [*(555) 555-9994*]

Local sources of assistance:
Fire Chief ..... [ ]
Police Chief ..... [ ]
Medical services ..... [ ]
Hospital ..... [ ]
Local utility provider ..... [ ]
Structural/mechanical engineer ..... [ ]
Local park/museum ..... [ ]

Figure 10.21. Emergency Contact List (Sample)

EMERGENCY VENDOR AND SOURCES OF ASSISTANCE LIST (SAMPLE)

Name	Contact Type	Phone #	Email	Cooperative Agreement/ Order #
	Abatement services (pest and hazardous materials)			
	Architect			
	Chemical testing laboratory			
	Cleaning services			
	Cold storage vault or freezer rental			
	Computer data recovery			
	Conservation laboratory			
	Dehumidification services			
	Electrician			
	Engineer (structural)			
	Fire detection and suppression system services			
	Freezer truck rental			
	Generator supplier			
	Glazier			
	HVAC services			
	Local library			
	Local museum			
	Portable equipment supplier			
	Public health consultant			
	Scientific monitoring equipment rental			
	Security system services			
	Transportation rental			

Figure 10.22. Emergency Vendor and Sources of Assistance List (Sample)

EMERGENCY SUPPLIES AND EQUIPMENT (SAMPLE)

Supply Category	Emergency and Salvage Supplies
Collections Salvage Supplies	aluminum trays, archival tape, blank newsprint, blotting paper, brushes with soft natural bristles, buckets, cheesecloth, clothesline, cotton cloth, Emergency Response & Salvage Wheel, freezer bags, garbage bags, garbage cans (clean), Japanese tissue paper, mesh screens (plastic), Mylar, packing boxes, packing tape, porch screen, polyethylene bags, polyethylene sheeting (inert), polyester boxes, precision knife with spare blades, rope, sandbags (small), sponges (cleaning, soot, etc.), towels (cloth and paper), tulle mesh, twill tape, twine, Tyvek® rolls and tags, wax paper, weights
Construction Materials	glue, lumber, nails, plywood, screws, twine, wire
Documentation Supplies	cameras, clipboards, color and gray scale cards, erasers, file folders, hole punch, laptop computers with Interior Collections Management System (ICMS) installed, notebooks, paper, pencils, pencil sharpeners, photo ID stand with numbers (magnetic), portable computer printer, rulers, staplers, tripods
Emergency Supplies and Equipment*	air compressors, baker's racks, batteries, bleach, brooms, calculators, cellular phone, containers, disinfectants, dumpsters, duct tape, dust pans, extension cords, fans, flashlights, freezer (commercial grade), generators, hair dryer with a cool setting, hand trucks, headlamps, hoses, knives, ladders, masking tape, mops, movable flood barriers, polyurethane ice chests, portable lights, portable tables, pumps, radios (battery-powered, wind-up, etc.), rope, sandbags (large), scissors, scrub brushes, shovels, spill-absorbent materials, squeegees, storage cart, surge protector, tarps (fire-retardant), trays, weights, wet/dry vacuum cleaners with HEPA filters and mesh screening material *Store equipment and manuals together.
First Aid Equipment	antibiotic cream, blankets, burn packs, cortisone cream, first aid kits, stretcher, 3 – 4 days of clean water for museum staff
Hand Tools	block and tackle pulleys, hammers, pliers, ropes, saws, scissors, screwdrivers, staple gun, staples, tape measures, tin snips, utility knives with spare blades, wire cutters, wood saws, wrenches
Museum Environmental Equipment	dataloggers, dehumidifiers, fans, hygrometers, hygrothermographs with extra paper, silica gel, space heaters (closed coil)
Protective Clothing	masks (N-95, HEPA respirator), nitrile gloves, protective coveralls, rain ponchos, rubber aprons and boots, safety glasses, safety goggles, safety vests, shoes

Figure 10.23. Emergency Supplies and Equipment (Sample)

SALVAGE PROCEDURES

*Follow these salvage procedures during the **first 48 – 72 hours** following an emergency incident to stabilize affected objects and prevent further damage or loss.*

Certain materials such as animal skins, basketry, glass plate negatives, metals, paintings, photographic materials, and works on paper may require professional treatment after the first 48 – 72 hours have passed. Consult the regional curator and a conservator to determine treatment needed.

See NPS *Conserve O Grams* Section 21: Disaster Response and Recovery; *Primer on Disaster Preparedness, Management & Response*, issued by the Smithsonian Institution, National Archives and Records Administration, Library of Congress, and National Park Service; and the Emergency Response & Salvage Wheel, published by AIC.

BEFORE SALVAGE

- Work with the Incident Commander, emergency operations coordinator and facility manager to ensure the salvage space has functioning HVAC, stable relative humidity (RH) and temperature, and excludes ultraviolet radiation.
- Work with the safety officer to arrange for professional abatement services as needed.
- Set up and secure back-up generators, dehumidifiers, and ventilation and/or fans.
- Contact contractors and service providers, including conservators.
- Establish secure access and key control policies and procedures, including a daily sign-in log.
- Set up environmental control and monitoring systems.
- Set up documentation procedures, including inventory control.
- Arrange for photography of damage and salvage activities.
- Ensure Personal Protective Equipment (PPE) is available for designated MCEOP team members.
- Set up mobile communications.

PREPARING THE SALVAGE AREA

- Set up a secure salvage area, including locking doors and key control.
- Assemble and allocate necessary equipment and supplies.
- Set up access to computers, including ICMS.
- Separate work areas from break areas.
- Clean and cover work surfaces, including tables.
- Place and secure mats at entrances to avoid tracking dirt into the salvage area.
- Prepare work stations for various activities, including documentation, photography, rinsing, air-drying, interleaving, and packing.
- Establish work teams with assigned responsibilities.
- Ensure staff and volunteers wear appropriate protective clothing, masks, nitrile gloves, and shoes.

GENERAL SALVAGE PROCEDURES

Use these general salvage procedures together with specific salvage procedures below.

- Relocate First Priority objects first, including the accession (and deaccession) book, to the salvage area.
- Determine which other objects should be relocated as time permits.
- Record temporary object storage locations.
- Salvage and stabilize First Priorities and other objects in consultation with the regional curator and conservator.
- List damage sustained and salvage activities using the Collection Damage and Salvage Overview (Figure 10.25).
- Do the minimum necessary to stabilize affected objects. Remember: “less is more.”
- Keep handling to a minimum. Handle objects carefully.
- Keep components of broken objects together.
- Use supports when handling weak or damaged objects.
- Ensure objects are labeled and packed into boxes that are labeled and include an inventory list.

Figure 10.24. Salvage Procedures

- Number and maintain an inventory of all boxes and containers.
- Document work in writing, including salvage activities.
- Photograph object damage and salvage activities. Include catalog numbers with all object images.
- Update ICMS records.

MOLD

- Isolate affected objects.
- If many objects are affected, or if there is a large-scale mold outbreak, contact an organization specialized and experienced in mold identification and abatement.
- Place affected objects in polyethylene bags to prevent cross-contamination.
- ***Only*** keep objects in bags for a short time to prevent further mold growth.
- House in a secure area with functioning HVAC and stable low RH and temperature.
- If wet and moldy materials cannot be dried immediately, place in cold storage or freezer.
- Wear appropriate protective clothing, including gloves and masks, when handling moldy objects.
- Avoid touching or blotting moldy objects, as this spreads mold spores.
- ***Do not*** attempt to remove mold until it is completely dry and powdery.
- Clean mold ***only*** in a well-ventilated area, such as under a fume hood.
- Determine whether to vacuum dried mold ***only*** after consulting with a specialist and conservator.
- If vacuuming is recommended, use a HEPA filtered vacuum on low suction to avoid damaging the object:
  - cover the nozzle with screening material to catch any dislodged material
  - dispose of the used vacuum bag, filter, and screening material
- Clean and wash protective clothing separately with soap and bleach.
- Dispose of contaminated protective clothing and cleaning equipment appropriately.

For detailed information, see *Conserve O Grams* 3/4: Mold: Prevention of Growth in Museum Collections and 16/1: Causes, Detection, and Prevention of Mold and Mildew on Textiles.

WATER DAMAGE TO OBJECTS

- ***Do not*** clean, rinse, remove mud, or treat objects without consulting with a conservator and the regional curator, as this may cause permanent damage or loss.
- Support wet and damaged objects using trays or boxes during relocation and salvage.
- Ensure that RH and temperature return to acceptable levels gradually to prevent shrinkage, cracking, loss in finishes, and/or loss of attached parts.
- Separate wet objects by degree of wetness.

Air Drying

- Air dry organic materials such as paper, skins, and leather, and inorganic materials such as glass, metals, and fired ceramics. Consult with a conservator and the regional curator for iron and unfired ceramics.
- Place damp or slightly wet objects in a clean environment that has stable low RH and temperature, functioning HVAC or ventilation, and excludes ultraviolet radiation.
- Place objects on flat surfaces covered with sheets of absorbent paper or blank newsprint.
- Space objects and items so air can circulate freely.
- If needed, use space heaters to hasten the drying process. ***Never*** use open-coil heaters; they are fire hazards.
- When books and paper are dry, close, lay flat on a table or other horizontal surface, gently form into their normal shape, and hold in place with a light weight.
- Check frequently for mold growth.
- *Do not:*
  - blow air directly onto fragile objects
  - use adhesives, metal clips, or detergents on wet materials
  - stack drying books on top of each other
  - open wet books, close books that have swollen open, or separate stuck together books and paper
- If many objects are affected, contact an organization experienced in handling water-damaged museum objects.

Figure 10.24. Salvage Procedures (continued)

Freezing and Cold Storage

- Determine which objects to place in cold storage or freezer after 48 – 72 hours, in consultation with a conservator and the regional curator.
- Arrange for a commercial-grade freezer or freezer truck for large volumes of water-damaged museum objects.
- ***Do not freeze*** sensitive objects such as:
  - bone, horn, ivory, shell, and teeth
  - canvas and wood-panel paintings
  - ceramics
  - composite objects containing inorganic materials (ceramics, glass, metals)
  - glass and glass plate negatives
  - inlaid, lacquered, painted, or varnished wood and furniture
  - objects under tension, such as drums
  - painted or treated leather
- Interleave paper items and blot to remove excess water using unprinted blotting paper, lint-free towels, or blank newsprint.
- Retain the original order of archival items.
- Wrap and pack objects safely for cold storage or freezing as appropriate.
- Label and inventory each container and include an inventory list.

For detailed information, see *Conserve O Grams* 21/3: Salvage of Water-Damaged Collections: Salvage At A Glance and 21/6: Salvage At A Glance Part III: Object Collections.

WATER DAMAGE TO SPACES HOUSING COLLECTIONS

- Limit access to the affected area(s).
- Work with the facility manager and safety officer to ensure there are no live electrical appliances or power lines in contact with water before entering.
- Arrange for the removal of water and:
  - keep the HVAC system running
  - set up dehumidifiers, pumps, fans, and other needed equipment
  - dehumidify the space or structure
- Lower the RH and temperature to avoid mold outbreaks.
- Arrange for set points for HVAC systems to return gradually to acceptable levels, based on monitoring data from impacted spaces.
- If using tarps, avoid direct contact with objects by draping from shelving supports and uprights.
- Be aware that:
  - moisture absorbed by organic material will continue to release over time
  - pressure from swollen objects may strain shelving and cause buckling or collapse
  - paper products such as boxes and archival storage will absorb water and may collapse
  - wooden doors may swell and stick
  - RH and temperature may take time to return to collection set points
- After the incident and when immediate risk is mitigated, remove protective coverings to allow air circulation and prevent mold outbreaks.

Figure 10.24. Salvage Procedures (continued)

COLLECTION DAMAGE AND SALVAGE OVERVIEW

Completed by: _____ **Date:** _____
Name, Title (Print)

Catalog Number	Object Name	Damage Sustained	Salvage Activities Taken	Conservation Treatment Needed (Y/N)	Photo (Y/N)	Temporary Location

Total number of objects affected: _____

Total number of objects requiring conservation treatment: _____

Figure 10.25. Collection Damage and Salvage Overview

POST-EMERGENCY CRITIQUE

Park Name: _____

Completed by: _____ Date: _____
Name, Title (Print)

Collections Care

Were emergency response and salvage activities well-coordinated and adequate? If not, what changes are needed?
Response / Comments:

Were object relocation and temporary storage arrangements and activities well planned, implemented, and documented? If not, what changes are needed?
Response / Comments:

Were object First Priorities for Relocation and Salvage adequately implemented? If not, what changes are needed?
Response / Comments:

Team Efficiency and Communication

Were MCEOP team members including team leader, staff, and volunteers working with collections given timely notice of the emergency and their assigned responsibilities? If not, what changes are needed?
Response / Comments:

Did MCEOP team members function according to their assigned responsibilities? If not, what changes are needed?
Response / Comments:

Were sufficient personnel available and effectively deployed? If not, what changes are needed?
Response / Comments:

What MCEOP team communication methods were used, and were they effective? If not, how could they be improved?
Response / Comments:

Was communication and coordination between the MCEOP team, Incident Commander, and park emergency responders effective? What changes are needed?
Response / Comments:

Implementation

Were museum emergency preparedness, response, relocation, and salvage procedures followed? If not, what changes are needed?
Response / Comments:

Were MCEOP team members provided with accurate and sufficient information? If not, what changes are needed?
Response / Comments:

Did serious unexpected problems or circumstances occur? If so, were they handled appropriately? If not, what changes are needed?
Response / Comments:

Were emergency supplies and equipment sufficient? If not, what supplies were needed? Were they obtained? If not, what changes are needed?
Response / Comments:

Was there a delay in response, and did it play a significant role in the outcome? If so, what changes are needed?
Response / Comments:

Did staff from other parks assist? Were they effective? If not, what changes are needed?
Response / Comments:

Figure 10.26. Post-Emergency Critique

What other sources of assistance were used? Were they effective? If not, what changes are needed?
Response / Comments:

Were major decisions promptly documented? Were activities photographed? If not, what changes are needed?
Response / Comments:

General Post-Emergency

Were Emergency Response Steps adequate and followed?
Response / Comments:

How could the emergency and damage have been avoided/reduced? Were corrective actions identified in the Museum Mitigation Action Plan implemented?
Response / Comments:

Did other unidentified impacts/weaknesses occur? If yes, what were they?
Response / Comments:

What documents, procedures, and lists require revision?
Response / Comments:

What lessons were learned during and after the emergency incident?
Response / Comments:

Additional recommendations:
Response / Comments:

Figure 10.26. Post-Emergency Critique (continued)

M. Glossary

Chain of Command: "The orderly line of authority within the ranks of the incident management organization." FEMA, "Emergency Management Institute Glossary," 2019.

Complex Emergency: "Two or more individual incidents located in the same general area that are assigned to a single Incident Commander." NPS RM-55.3: Definitions.

Designated secure and stable location: A structure or space designated in advance with physical security, including access and key control policies and procedures, as well as appropriate stable relative humidity and temperature and exclusion of ultraviolet radiation.

Disaster: An emergency posing a significant threat to life safety and/or collections, which may occur at a large scale.
_____ "An occurrence of a natural catastrophe, technological accident, or human-caused event that has resulted in severe property damage, deaths, and/or multiple injuries." FEMA, "Emergency Management Institute Glossary," 2019. *See* Emergency.

Emergency: An incident threatening collections and/or life safety. Emergencies may be large- or small-scale, occur due to natural or human causes, occur individually or as a complex of two or more, with or without warning.

Hazard: A natural or human-caused occurrence (such as volcanic eruption, vandalism, or flood) that can negatively impact life safety, collections, and structures housing collections. *See* Risk and Threat.

Hot work: "Work involving burning, welding, or a similar operation that is capable of initiating fires or explosions. Common hot work processes are welding, soldering, cutting, and brazing. When flammable materials are present, processes such as grinding and drilling become hot work." RM-58 7.2.3.8: Hot Work.

Incident: "An occurrence, natural or human-caused, that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response." FEMA, "Emergency Management Institute Glossary," 2019.

Incident Commander (IC): "The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The Incident Commander has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site." FEMA, "Emergency Management Institute Glossary," 2019.

Incident Command System (ICS): "A standardized on-scene emergency management construct specifically designed to provide an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The Incident Command System is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. ICS is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations." FEMA, "Emergency Management Institute Glossary," 2019.

Major Disaster: "…[A]ny hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosion, or other catastrophe in any part of the United States which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance by the Federal Government to supplement the efforts and resources of State and local governments and relief organizations." 905 DM 1: Policy, Functions, and Responsibilities.

Mitigation: "Includes activities to reduce the loss of life and property from natural and/or human-caused disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities. Mitigation seeks to fix the cycle of disaster damage, reconstruction, and repeated damage. These activities or actions, in most cases, will have a long-term sustained effect. Examples: Structural changes to buildings, elevating utilities, bracing and locking chemical cabinets, properly mounting lighting fixtures, ceiling systems, cutting vegetation to reduce wildland fires, etc." FEMA, "Emergency Management Institute Glossary," 2019.

Museum Collections Emergency Operations Plan (MCEOP): A document containing museum emergency planning standards and policies; Incident Command System (ICS); collections and structures housing collections overview; risk assessment; MCEOP team responsibilities; First Priorities for Relocation and Salvage; emergency response, including Emergency Response Steps; security; emergency contact information; emergency equipment, services, and supplies; salvage procedures; Post-Emergency Critique; MCEOP update and review; and figures and floor plans. Part of the park's Emergency Operations Plan (EOP).

Museum Mitigation Action Plan: A plan with specific corrective actions to be implemented to remove or reduce deficiencies in storage, exhibit, and work spaces that could cause or increase the risk of emergency incidents.

National Incident Management System (NIMS): "A national program consisting of five major subsystems which collectively provide a total systems approach to all-hazard incident management. The subsystems are the Incident Command System, Training, Qualifications and Certification, Supporting Technologies, and Publications Management." NPS RM-55.3: Definitions.

Portable Fire Extinguisher: A portable canister filled with pressurized chemicals or water to put out fires.

Preparedness: "A continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. Within the National Incident Management System (NIMS), preparedness focuses on the following elements: planning, procedures and protocols, training and exercises, personnel qualification and certification, and equipment certification…" FEMA, "Emergency Management Institute Glossary," 2019.

Recovery: The long-term process of restoring normal park operations and structural stability after an emergency, as well as conducting conservation and treatment of affected objects. Salvage is the most immediate phase of recovery pertaining to museum collections.

Relocation: The movement of collections to a designated secure and stable location before or immediately after an emergency.

Response: "Activities that address the short-term, direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs. Response also includes the execution of emergency operations plans and of mitigation activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes. As indicated by the situation, response activities include applying intelligence and other information to lessen the effects or consequences of an incident; increased security operations; continuing investigations into nature and source of the threat; ongoing public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and specific law enforcement operations aimed at preempting, interdicting, or disrupting illegal activity, and apprehending actual perpetrators and bringing them to justice. Examples: Lockdown, shelter-in-place, evacuation of students, search and rescue operations, fire suppression, etc." FEMA, "Emergency Management Institute Glossary," 2019.

Risk: The combination of hazards (or threats) and vulnerabilities faced by collections and structures housing collections. *See* Hazard, Threat, and Vulnerability.

Risk Assessment: Analyzing hazards (or threats) and vulnerabilities and their probability of occurrence to identify possible ways losses to collections, structures housing collections, and life safety may occur.

Salvage: "[T]he systematic recovery of damaged cultural heritage objects, building fragments and decorative elements from a site negatively impacted by a hazard event. Salvage of movable cultural heritage involves an evacuation process…, with the inclusion of additional actions for the triage and stabilization of cultural heritage material, designed to prevent further damage until professional intervention can take place…" ICCROM, *First Aid to Cultural Heritage in Times of Crisis*, 2018.

Severity: The level of damage sustained by collections and structures housing collections as the result of an emergency incident.

Threat: Natural factors (such as earthquake, hurricane and other severe weather), geological, geographic, and climatic factors and location (such as proximity to a tidal river, coast, or volcano; placement within a major earthquake zone, Wildland-Urban Interface, or canyon prone to floods; or near an area with a high concentration of hazardous materials), or human factors (such as construction work, fire, terrorism, and vandalism) that can cause harm to life safety, collections, and structures housing collections. *See* Hazard and Risk.

Vulnerability: The susceptibility of collections or structures housing collections to sustain damage based on the composition and condition of the collection (such as glass or film), nature and/or condition of structures housing collections (such as adobe, wood, or flat-roofed masonry structures), presence or absence of well-maintained systems and equipment (such as automatic fire detection and alarm and automatic fire sprinkler and/or suppression systems, HVAC, and/or water alarms) and ease of object removal from storage or exhibit before or during an emergency incident. *See* Risk.

N. Abbreviations

AAR	After-Action Review
BPA	Blanket Purchase Agreement
COOP	Continuity of Operations Plan
COR	Contracting Officer's Representative
EOP	Emergency Operations Plan
FMSS	Facility Management Software System
FSL	Facility Security Level
HEPA	High Efficiency Particulate Air
HVAC	Heating, Ventilation, and Air Conditioning
IC	Incident Commander
ICMS	Interior Collections Management System
ICS	Incident Command System
IDIQ	Indefinite Delivery Indefinite Quantity (applied to a contract)
MCEOP	Museum Collections Emergency Operations Plan
MOU	Memorandum of Understanding
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NOAA	National Oceanographic and Atmospheric Administration
NWS	National Weather Service
OEP	Occupant Emergency Plan
OSHA	Occupational Safety and Health Administration
PII	Personally Identifiable Information
PMIS	Project Management Information System
PPE	Personal Protective Equipment
PSFC	Park Structural Fire Coordinator
RERE	Repair and Rehabilitation
RH	Relative Humidity
RSFM	Regional Structural Fire Manager
SDS	Safety Data Sheet
UL	Underwriters Laboratory
UV	Ultraviolet Radiation

O. Index