



Risk Assessment Process Manual

Introduction

This manual explains the risk assessment process. Completing a risk assessment is necessary to evaluate hazards, thereby guiding mitigation efforts and reducing risks by implementing control measures. By doing so, institutions and individuals are better poised to prevent and respond to an emergency. Risk assessment is a crucial first step to writing an emergency plan.

This information was compiled by the Association of Registrars and Collections Specialist (ARCS) Emergency Programming Sub-Committee to act as a resource for those seeking to improve, update, or develop a risk assessment procedure.

The Sub-Committee encourages all institutions to develop a risk assessment procedure. Identifying risks and hazards can be disheartening and overwhelming but becomes more manageable with a committee or a group to ensure all issues and gaps have been addressed.

As with all emergency planning and preparedness, risk assessments and documentation pertaining to them should be updated in the institution's Emergency Plans whenever a new assessment is conducted or on an annual basis as a minimum.

Important Terms to Know

A **HAZARD** is something that has the potential to do harm.

A **RISK** is the likelihood of a hazard causing harm.

MITIGATION is eliminating hazards that prevent an emergency from occurring and reduce harm to people, collections, and property.

PREPAREDNESS is activities that prepare and equip personnel to handle an emergency.

RESPONSE is the activities providing immediate care for people and collections following an emergency.

RECOVERY is activities following an emergency to return operations to normal or “new normal”

What is a Risk Assessment?

A Risk Assessment is a qualitative or quantitative approach to determine the nature and extent of disaster risk by analyzing potential hazards and evaluating existing conditions of exposure and vulnerability that together could harm people and collections.

Risk Assessments:

- Are an evaluation meant to identify hazards and evaluate their level of risk to the collection and/or building;
- Are a review of the technical characteristics of hazards such as their location, intensity, frequency, and probability;
- Are an analysis of exposure and vulnerability;
- Help inform institutional planning & creation of an Emergency Plan;
- Reduce the effects of a disaster;
- Allow institutions to be proactive; and
- Can be either formal or informal.

Why Conduct a Risk Assessment?

Once hazards and their risks have been identified, the results are analyzed and ranked on the likelihood and severity of the risk. From here, it can be determined what measures should be in place to effectively mitigate or control damage should the hazard occur.

Conducting a risk assessment creates awareness of potential hazards and risks within an institution, while also identifying who may be at risk (e.g. employees, visitors, contractors, etc.). It can also assist in determining funding and support needed for mitigation

The goal is to answer the following questions:

1. What can happen and under what circumstances?
2. What are the possible consequences?
3. How likely are the possible consequences to occur?
4. Is the risk controlled effectively, or is further action required?

Who Conducts a Risk Assessment?

Assessments should be completed as a team, including facilities, collections staff, security, safety specialists, vendors, and any other stakeholders. Each of these experts will bring a unique perspective for identifying the hazards and will allow open conversation to identify mitigation efforts. It is not advisable to conduct risk assessments in a silo or individually.

Engaging all staff, stakeholders, and actors in a risk assessment also encourages buy-in from institution administration. This buy-in can result in extra funding and support for collection emergency preparedness and response.

When to Conduct a Risk Assessment

At a minimum, a risk assessment should be conducted annually. However, there are many circumstances in which a risk assessment is needed more frequently, including:

- Before changes are introduced to existing processes or activities, including when products, machinery, tools, or equipment change
- When new information concerning hazards becomes available;
- Before and after construction related activities;
- When new hazards are introduced; and
- After an emergency event to identify current primary and secondary risks to collections.

Preparing for Risk Assessment

As with all aspects of emergency planning and response, adequate preparation is key to success. In order to plan for a risk assessment, determine the following:

- Scope of risk assessment and specifics about what is being assessed;
- Resources needed such as documentation supplies;
- Type of risk analysis measures, such as how exact the parameters need to be in order to provide the most accurate evaluation;
- Stakeholders, including managers or supervisors; and
- Relevant laws, regulations, codes, or standards applicable in the institution's jurisdiction, as well as institutional policies and procedures.

How to Complete a Risk Assessment

Risk Assessments should be conducted by looking holistically at the institution and its surrounding environment. Hazards can occur at any level and play upon other elements of the institution, which is why it is vital to assess on a whole. A full risk assessment should include the region or site level, the building envelope, rooms containing collections, the cabinets or storage cabinets or exhibit cases that hold collections, and finally the rehousing method at the object level.

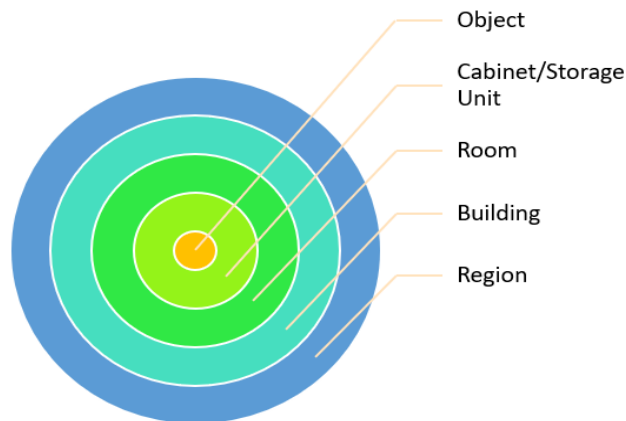


Figure 1: Diagram to holistic approach to risk assessment

To do an assessment, one should:

- Identify hazards;
- Determine the likelihood of harm or damage to the collection, including its severity;
 - Consider normal operational situations as well as non-standard events such as maintenance, shutdowns, power outages, emergencies, extreme weather, etc.
 - Review available health and safety information about the hazard such as manufacturer's literature, results of testing, workplace inspection reports, incident reports, etc.
 - Identify and understand the legislated requirements.
- Identify actions necessary to eliminate the hazard, or minimize the risk;
- Evaluate to determine if the hazard has been eliminated or if the risk has been appropriately controlled from previous assessments;
- Monitor to ensure the control continues to be effective; and
- Keep any documentation that may be required. Documentation may include detailing the process used to assess the risk, evaluations, or notes on decisions.

How to Identify Risks

The ultimate goal of conducting a risk assessment is to find and mitigate possible hazards affecting the institution.

To ensure that all hazards are found:

- Start with the Ten Agents of Deterioration and the ways in which each one can cause damage or harm;
 - Physical forces, fire, pests, light, relative humidity, temperature, theft, water, pollutants, and dissociation
 - Understand the source and path of the hazard and how it affects one of these agents (see Figure 2).
- Examine previous accident, incident, and near-miss records;
- Use reports by local, state, and federal Emergency Management Agencies; and
- Research earthquake or flood maps for the institution's region.

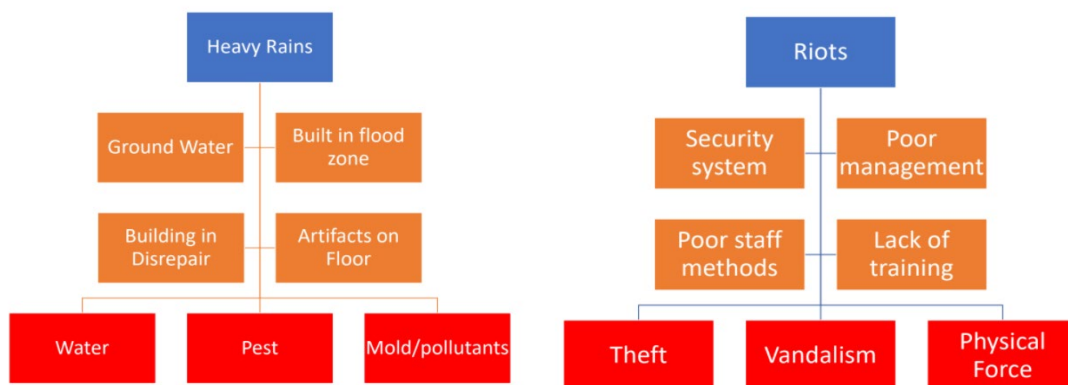


Figure 2: Sample Hazard Tracing to 10 Agents of Deterioration

How to Analyze Risks

Many components within the museum or cultural institution are vulnerable to hazards of various degrees depending on their nature, their intensity and concentration, pathways from hazard source to specific components and systems of the property, whose conditions will also determine their susceptibility to those hazards.

Key Concepts:

- Analyze hazards using any available scientific information that describes a causal relationship.
- Vulnerability is a product and a process which contributes to change over time. Analyzing vulnerability factors that expose various elements of the property to risk from hazards.
- Listing all the hazards that could potentially have an adverse impact on cultural heritage. This would link to the identification of risks covered in the previous section.
- Identifying any issues which when combined with potential hazards could cause an emergency to the cultural institution
- Analyzing the “cause-effect” relationships between various primary hazards and underlying risk factors that increase the institution’s vulnerability and expose it to disaster risk.

Evaluating the Magnitude of Risk

Priority is established by considering employee and collection exposure and the potential for incident or loss. By prioritizing the risks, action lists for mitigation and preparedness are created.

It is important to recognize that there is no one single way to best determine the level of risk. Each institution must determine which technique will work best for each unique situation and facility.

PROBABILITY	HIGH					
	MED to HI					
	MEDIUM					
	LOW to MED					
	LOW					
		LOW	LOW to MED	MEDIUM	MED to HI	HIGH
		IMPACT				

Figure 3: Probability and Impact Evaluation Tool for Risk Assessment

- Determine the magnitude of risk associated with each hazard. To research the hazard, consider:
 - Type and extent of hazard
 - Location susceptibility
 - Probability of future occurrences
 - Past experience
 - Current legislation

- Best practices according to industry standard
- Use a systematic ranking system, and assign a number or value to each level (i.e. (1) catastrophic priority, (2) extreme priority, (3) high priority, (4) medium priority, and (5) low priority);
- Compare all of the identified hazards based on where they fall within the ranking system. These rankings will correspond to recommended actions, such as:
 - (1) Catastrophic priority: stop the process immediately and implement controls;
 - (2) Extreme priority: Investigate the process and implement controls immediately;
 - (3) High priority: Keep the process going, however, develop and implement a control plan as soon as possible.
 - (4) Medium priority: Keep the process going but monitor regularly. Consider a control plan; and
 - (5) Low priority: Keep monitoring the process.
- To establish controls for each specific hazard, consider:
 - Elimination of the hazard, such as removal hazardous materials or dangerous infrastructure;
 - Engineering controls, such as modifications to equipment or ventilation systems;
 - Administrative Controls, such as establishing policies and procedures; and
 - Personal Protective Equipment (PPE), such as regulating equipment worn by individuals to reduce exposure to chemicals, noise, etc.

Scenario Based- Testing

Scenarios are essentially constructed on assumptions and associated uncertainties, which are based on the evaluation of existing situations through risk identification. These are developed for a specified time period and subsequently assessed for their potential impact on the cultural institution. Performing scenarios will help further identify any gaps in the risk assessment and clarify important/high impact mitigation methods.

Key Concepts:

- Scenarios can have one or two hazards of varying degrees;
- Scenarios are assumptions based on risk identification and condition reporting;
- Results of scenarios offers insight into methods for mitigating risk; and
- Provide administrators with information on reducing risk to cultural sites based on clear information.



Figure 4: Cycle of Risk Assessments

Conclusion

Once a cultural institution has completed a risk assessment, they possess the information needed to develop an Emergency Plan. Identifying your hazards and the risk they pose to the institution can also present opportunities for mitigation and preparedness. Mitigation and preparedness measures might require financial support; with the support of the Risk Assessment team and the assessment itself, there is a higher probability of buy-in from administrators and funders.

Risk Assessments should become part of a regular wellness check for institutions. This should include regular scenario-based learning opportunities to identify hidden hazards. The results of the assessments can be presented as checklist or reports, based on the needs of the institution. The results will be a better protected and prepared cultural institution.

Recommended Resources

- FAIC's [Risk Evaluation & Planning Program](#)
 - See their [Walk-through Checklist!](#)
- ICCROM's [Guide to Risk Management of Cultural Heritage](#)
- Museum SOS: <http://www.museum-sos.org/htm/index.html>
- American Museum of Natural History's ["Collections Risk Management Program"](#)
- National Park Service [Fillable Risk Assessment Worksheet](#)
- Agnes W. Brokerhof's [Assessing Risks in Historic Houses: Approaches and Benefits](#)
- Agnes W. Brokerhof & Anna E. [Bulow's The QuickScan - a quick risk scan to identify value and hazards in a collection](#)