

Emergency											<b>Risk Assessment Worksheet</b> Facility: _____ Date: _____ Completed By: _____ Date: _____		Yes	No	N/A	MH-I Checklist Reference
Fire	Flood	Storm	Med. Emer.	Util. Failure	Haz. Mat.	Transp. Accid.	Civil Unrest	Bomb/Explos	Earthquake	Volcano						
<b>Risk Factors</b>																
X	X	X	X	X	X	X	X	X	X	X	The building's floor loading capacity is known and followed by all staff working in the space.					
X	X	X	X	X	X	X	X	X	X	X	The building has a back-up power source such as batteries or a solar panel for fire alarms, detectors, and suppression systems and exit and safety lighting, environmental controls, and security systems in case of power outage.					
X	X	X	X	X	X	X	X	X	X	X	The special needs of museum objects and museum records are incorporated in the unit's Structural Fire Plan.				F5	
X	X	X	X	X	X	X	X	X	X	X	The staff are trained biannually and tested in evacuation procedures for themselves and visitors for all types of emergencies including how to pull alarms, close windows and doors, avoid elevators, and follow a pre-chosen evacuation route to a common assembly point.					
X	X	X	X	X	X	X	X	X	X	X	The building has a well-maintained elevator with appropriate emergency features, such as an alarm, a working 24-hour-a-day phone, an escape hatch, and a warning sign that the elevator is not to be used as an emergency evacuation route.					
X	X	X	X	X	X	X	X	X	X	X	The museum staff have keys to all mechanical rooms and janitor's closets.					
X	X	X	X	X	X	X	X	X	X	X	Building exits are free of obstruction.					
X	X	X	X	X	X	X	X	X	X	X	Space is sufficient and well designed for the movement of staff, equipment, and objects in and out without hindrances (e.g., low ceilings; inadequately sized doors; or narrow, winding, or steep stairways).					
X	X	X	X	X	X	X	X	X	X	X	The unit has determined the extent to which museum collections and associated museum records are at risk from the threats listed in the NPS <i>Museum Handbook</i> , Part 1, Chapters 9 and 10.				E10	
X	X	X	X	X	X	X	X	X	X	X	The special needs of museum collections and records are incorporated into the unit's Emergency Operation Plan (EOP).				E8	
X	X	X	X	X	X	X	X	X	X	X	Space is organized in a way that allows for easy access to museum objects and use of proper storage equipment.				B13	
X	X	X	X	X	X	X	X	X	X	X	Written rules and procedures are available to provide staff with guidance on the handling and moving of museum objects.				G2	
X	X	X	X	X	X	X	X	X	X	X	The building has a good first aid kit.					
X	X	X	X	X	X	X	X	X	X	X	Museum staff have CPR and basic first aid training.					

**Figure 10.2. Risk Assessment Worksheet**

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X	X	X	X	X	X	X	X	X	X	X	Museum work is adequately staffed for the workload so that no single staff member is expected to handle emergency work alone.				
X	X	X	X	X	X	X	X	X	X	X	The building is in an easily reachable public space with wide frequently cleared roads that are passable year round.				
X	X	X	X	X	X	X	X	X	X	X	The building has adequate (1 per staff member) and operational emergency flashlights and alternative communications tools, such as functioning cellular phones or walkie-talkies.				
X	X	X	X		X	X	X	X	X	X	Museum staff are trained and tested in how to identify and deal with common museum health risks such as asbestos-residue, bacteria, carcinogens, dead animals, fungi and yeasts (such as aspergillum mold), insects, lead powder residue, old medicines and pesticides, parasites, polychlorinated biphenyls in soot, radioactive source materials, and viral contamination (including hantavirus).				
X	X	X		X	X	X	X	X	X	X	Old (>10 years) gas, oil, or kerosene appliances or vehicles found in museum collections or in museum spaces are totally drained of flammable liquids. Functional appliances in the building are checked annually and maintained.				
X	X	X		X	X	X	X	X	X	X	All boxed materials are stored in containers such as cardboard or polyethelene of a size and weight that can be moved by a single person.				
X	X	X		X	X	X	X	X	X	X	The museum staff knows how to shut down the building for emergencies. For example, the staff can turn on back-up power sources, tape plastic over windows and vents, close air intake valves, close and secure all doors, turn off all appliances and utilities, lower blinds, and use passive humidity control equipment.				
X	X	X		X	X		X	X	X	X	The building furniture is solid, fire resistant, braced powder coated steel, bolted to the walls, in good repair, and without sealed air pockets.				
X	X	X			X	X	X	X	X	X	The building is strong and in good repair.				
X	X	X	X				X	X	X	X	All computer files, particularly finding aids and ANCS+ cataloging data, are backed up and stored in multiple locations of which some are off-site.				
X	X	X		X	X	X		X	X		The building is away from power lines, electrical cabling, or other major lightening attractant.				
X	X	X				X	X	X	X	X	The building is free from substantial structural damage such as that caused by water, earthquake, or termites during the last decade.				

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											<b>Risk Factors</b>				
X	X	X	X		X			X	X		Natural history specimens stored in fluids are housed in a space that provides appropriate ventilation.				B27
X	X	X				X		X	X	X	The building is free from cracked or weakened support beams.				
X	X	X				X		X	X	X	The building is free from sagging floors or ceilings.				
X	X	X			X			X	X		Dust covers are used on open shelving when objects are not otherwise protected from dust (e.g., in boxes).				D15
X	X	X			X			X	X		Natural history specimens stored in fluids are housed separately from dry specimen collections on secured and bolted shelves, or preferably, in cabinets with doors.				
X	X	X					X	X	X		If the storage and work equipment (shelving, cabinetry) is mobile (such as mobile bun rack shelving), it can be tethered securely.				
X	X		X		X	X				X	Park staff have been examined by a doctor and fitted with appropriate rated-breathing apparatus.				
X	X			X	X			X	X		All garages and fuel storage, propane storage, or other flammable liquid storage areas are located at least one block from the building.				
X	X	X	X						X		Heavy and oversize museum objects are housed on bottom shelves.				
X	X	X	X						X		The museum spaces are housed on a floor higher than the basement floor but below the third floor.				
X	X	X		X	X						Levels of relative humidity and temperature in storage and exhibit spaces are monitored on a daily basis to provide an accurate and complete picture of all changes in both of these environmental factors during each year.				D1
X	X	X		X					X		The building is currently free of all ongoing construction or renovation work, including HVAC work, roof renovation, and plumbing or wiring work.				
X	X	X		X					X		Pipes, fan coils, sprinkler pipes, storm drain or plumbing work in the space is up-to-code and not leaking.				
X	X	X			X				X		All appliance cords are checked annually.				
X	X	X						X	X		The storage and work equipment (shelving, cabinetry) in the building is bolted to the walls and floor.				
X	X	X						X	X		Office windows are made of tempered glass and have storm shutters.				
X	X				X			X	X		The building has UL listed equipment and appliances, and fire resistant tile or carpeting throughout.				

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<b>Risk Factors</b>															
X		X		X				X	X		The electrical system in the building is inspected every 5 years and is currently up-to-code. Particular care is given to museum storage, work, exhibit, or research areas.				
X		X			X			X		X	Ventilation vents for HVAC or appliances, including computers, are free of obstruction.				
X			X		X		X	X			All weapons should be checked to ensure they are unloaded and that the museum building is free of live ammunition and ordnance.				
X							X	X	X	X	Spaces housing museum collections and their structural components (such as walls, floors, ceilings, doors and windows) are made fire-resistant to the extent possible, given the nature of the structure.				F7
	X	X			X			X	X		The space is as free of water, steam, drain, and fuel pipes as is practical.				B9
	X	X					X	X	X		Entrances to museum spaces are equipped with metal or solid-core wood doors that have deadbolt locks.				E11
	X	X	X	X	X						Monitoring (inspections) for evidence of insect, mold, and rodent infestations is conducted on an ongoing basis with especially close inspection of museum objects on a monthly basis.				D9
X	X	X		X							The building pipes, stairways, and other conduits are enclosed and/or insulated.				
X	X	X			X						The building has good structural seals including a good quality roof and tight windows and doors.				
X	X	X							X		All appliances are unplugged each evening.				
X	X	X							X		Museum cabinet drawers are loaded to less than the manufacturer's recommended weight capacity.				B16
X	X	X							X		Museum objects and archival materials are housed in storage containers or on mounts (e.g., boxes, folders, envelopes, herbarium paper) that are made of museum/archival quality materials.				B26
X		X		X					X		The building is at least 15 feet from shrubs, bushes, or trees.				
X		X		X					X		All dead tree limbs and brushwood within 50 feet of the building have been trimmed and removed.				
X			X		X			X			Spaces and/or cabinets housing specimens stored in fluids, specimens treated with pesticides, rocks/minerals/fossils that are radioactive, or nitrate film are identified by appropriate health/safety sign.				B30
X				X				X	X		Fire detection and suppression systems appropriate to the risks involved, to the nature of the museum collection, and to the structure housing the collections are <u>installed and operable</u> .				F8

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<b>Risk Factors</b>															
X				X				X	X		Fire detection and suppression systems are inspected and maintained on a regular schedule to ensure they are fully operational.				F1
X					X			X	X		Flammable liquids and materials are housed outside museum storage spaces and, regardless of where stored, such materials are housed in approved flammables storage cabinets with proper ventilation.				F10
	X	X		X					X		The space is an area that will not flood if pipes break, or drains back up.				B5, C3
	X	X		X					X		All drains, pipes, and sewer lines are up to code and checked at least annually, particularly laboratory acid traps, kitchen grease traps, and storm drains.				
	X	X		X					X		The building basement is free of leaks and is above the local water table level.				
	X	X		X					X		Water detectors have been installed throughout the building.				
	X	X		X	X						A record of daily observations, noting occurrences such as unusual exterior climatic conditions, leaky roof, re-calibration of equipment, or an unusual visitation pattern, is maintained to help explain any variations in relative humidity and temperature readings.				D2
	X	X						X	X		Artwork is removed from frames and housed in Solander boxes or attached to storage screens with steel "S" hooks.				
	X	X						X	X		Non-historic heavy equipment and furniture is bolted to load-bearing walls.				
X	X	X									The museum space has tile, not carpeting; paint, not wallpaper; and metal, not wood furniture in an effort to avoid holding flood water and reduce fire hazard.				
X			X					X			There is a fire station within 10 miles of the building.				
X				X	X						Records of relative humidity and temperature readings and of daily observations are reviewed and analyzed monthly to determine relative humidity and temperature highs, lows, and means; and the frequency and extent of fluctuations.				D4
X					X				X		The space housing museum collections is free from concrete flooring that has air passages between floors.				
X					X			X			Nitrate film is housed in buffered sleeves or envelopes, placed in Ziplock™ polyethylene bags, and stored in appropriate frost-free freezers in separate space from all other collections.				B29
X							X	X			The building has been free of arson or repeated arson threats in the past 10 years.				

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<b>Risk Factors</b>															
X								X	X		Orientation on the location, nature, significance, and specific needs of museum property has been provided to NPS and non-NPS fire fighting entities that are responsible for responding to the suppression of a fire.				F6
X								X	X		An appropriate number and type of fire extinguishers are installed according to the anticipated types of fires, the nature of the collection, and the size of the protected area.				F9
	X	X		X							The museum space is free of problems with pipes or drains freezing in the winter.				
	X	X		X							The storage area is free from overhead water and waste pipes and storm and emergency drains.				
	X	X		X							All existing trees and shrubs within 15 feet of the building are clearly marked on landscaping plans so that tree roots acting as water courses can be found.				
	X	X			X						Records of relative humidity and temperature readings and of daily observations are permanently retained in the unit's curatorial files.				D3
	X	X			X						The building is free from active mold. <i>Note:</i> Check attics, basements, the HVAC vents, and drains.				
	X		X		X						The building is free of significant health and safety risks from pest-borne disease or hazardous chemicals.				
	X			X			X				Space is free of water, gas, or electric meters, electrical panels, and utility valves that require monitoring and servicing by non-curatorial personnel.				B10
	X	X							X		The facility is outside the 100-year floodplain.				B4, C2
	X	X							X		All drains, conduits, and pipes are clearly marked on building plans so they can be found quickly in case of leaks.				
	X	X							X		The building has good drainage near the footings or has been landscaped to move water away from the building.				
	X	X							X		Check valves are installed in building sewer traps to prevent floodwaters from backing up.				
	X	X								X	If the space has windows, skylights, or chimneys, they are blocked (e.g., covered with plywood sheets) and insulated.				B7
	X	X								X	The building is located away from areas with significant storm activity, such as "tornado alley," a valley, shoreline, lowland area, or a mountain weather zone.				

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		X		X					X		The building's various utilities each have their own conduits and poles, rather than sharing.				
		X				X			X		Where needed, mounts constructed of museum quality material are used to support objects and specimens.				C6
			X				X	X			The building is a safe distance from public transportation.				
			X				X	X			The building is a safe distance from any major metropolitan area.				
X				X							The park has installed equipment/system in each space housing museum collections to control relative humidity and temperature.				D12
X				X							The HVAC system in all museum spaces (storage, reference, and work) is <10 years old and inspected annually.				
X				X							Older (>15 years) fluorescent light bulb ballasts throughout the building have been replaced with thermally-protected Class P ballasts.				
X					X						The building is free of undeteriorated nitrate film as still photographic negatives, X-rays, or motion picture film (>875 sheets, 35 pounds of film, or 20 cans of film). All deteriorated nitrate film is stored in off-site cold storage.				
X								X			There is an accessible fire hydrant with usable water pressure within 300 yards of the building.				
X								X			There is an alternative water source for fire fighting besides the fire hydrant.				
X								X			The unit has conducted a fire protection survey.				H3
X								X			Smoking, drinking, and eating and displaying living plants, fresh flowers, and foodstuffs in museum storage and exhibit spaces and in research, work, and research/reference spaces are prohibited in writing.				G3
X								X			Audiovisual equipment and other interpretive materials, and curatorial forms and supplies are stored outside the museum storage space in an appropriate cabinet.				
X									X		The building is free of active fireplaces, ovens/stoves, space and kerosene heaters, and wood-burning stoves, and any interpretive wood stoves, fireplaces, oil lamps, or forges are more than 300 yards away from the building.				
X										X	The space housing museum collections is made of materials other than wood frame and wood shingles.				

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											Facility: _____	Date: _____					
	X	X									The building has a new, pitched roof in good repair rather than a flat roof, an older roof (>10 years), a leaking roof, or a roof in poor repair.						
	X	X									The gutters on the building are in good repair, cleaned bi-annually, and well attached.						
	X	X									Building downspouts are long, clear, unobstructed, well-placed, and direct water away from the building.						
	X	X									The building has a good vapor barrier or damp course (barrier against rising moisture).						
	X	X									Storm drains are fitted with heavy screens to prevent small items from washing down the drain.						
	X	X									The building has no roof access doors or glass doors.						
	X	X									If the roof is about to be changed, the contractor is contractually required to secure the space from all water damage each evening.						
	X	X									Museum cabinets are raised off the floor at least 4" (preferably 6") as a precaution against potential flooding and to facilitate cleaning of floors and inspection for pest problems. Bottom shelves of shelving units are raised off the floor 4" to 6".						B20
	X	X									All storage furniture, such as shelving, is metal (not wood which swells when wet); is fully enclosed or has canopies to limit leakage damage; and has closing doors to keep materials from floating away. <i>Note:</i> Avoid metal furniture with sealed false bottoms or other air spaces.						
	X	X									All drainage for HVAC systems and condensation collection pans are free from leaks, mold, and easy conduits or routes to the museum space.						
	X	X									Park museum staff is trained in flood mitigation techniques including identifying high priority collections, evacuating materials to higher floors, wrapping furniture in plastic, moving items off the floor, shutting down the building, handling of wet items, emergency treatments for stabilization, and drying techniques.						
	X	X									The museum roof, HVAC, foundation, and other structural elements have been bolted together with heavy-duty fasteners to avoid separation of the structure from the foundation during a flood.						
	X	X									The building is well situated, away from high or exposed ground.						
	X	X									Museum staff in the building can easily hear emergency weather alarms.						

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											<b>Risk Factors</b>				
	X	X									Museum staff have immediate access to weather band radios or other weather alert equipment.				
	X	X									Museum staff know how to prepare collections by moving them out of basements, away from windows, and securing outdoor items, when a storm or flood warning is announced.				
			X		X						The building is free of damaged or flaking asbestos insulation (including insulation around wiring), floor tiles, wallboard, or ceiling tiles and lead paint. The collections are free of asbestos contamination.				
			X		X						The building has emergency eyewash and shower stations.				
			X		X						The monitoring and control of pests is coordinated with the unit's Integrated Pest Management Program.				D10
			X		X						Housekeeping in museum storage and exhibit spaces is performed according to a plan's established schedule.				G1
			X		X						OSHA-required surveys of all toxic materials are made annually and provided to all firefighters, emergency workers, and the MCEOP.				
			X		X						Park staff is trained in hazardous material handling.				
						X	X				The building is located more than ¼ mile from the visitor center or other large open space.				
							X	X			The park has been vandalism-, terrorism-, and political demonstration-free for the last decade.				
							X	X			The security for the building is excellent 365 days a year and 24 hours a day and is not easily circumvented.				
							X	X			The park is free from regular bomb threats.				
							X	X			The park has been free of significant employee relations or community relations problems within the last five years.				
								X	X		Closed cell polyethylene foam is used in museum cabinet drawers and on shelving to cushion objects (Exception: If natural history specimens are to be used for analysis of organic chemicals, use plastic-free storage containers.)				B24
								X	X		Objects in museum cabinets are placed in specimen trays, padded, or otherwise prevented from shifting when drawers are opened and closed.				B25

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								X	X		Non-historic cabinets are attached to the wall and have steel cross-braces.				
								X	X		Plexiglas is used for all transparent exhibit shelving.				
								X	X		The building has been inspected and found adequate by a structural engineer within the last 10 years.				
X											Fire detectors are installed in all concealed spaces such as false ceilings, crawl spaces, or other similar passageways.				
X											Staff are trained in the use of fire extinguishers.				F3
		X									The building has storm shutters and a designated emergency storm shelter area, such as a basement or windowless interior hallway on the ground floor.				
		X									Museum staff understand the difference between a storm "watch" and a storm "warning."				
			X								There is a hospital within 10 miles of the building.				
				X							The building is well insulated so that during a power outage the temperature changes less than 5°F or 5% RH within 8 hours.				
					X						Hazardous materials in collections, such as asbestos objects, medicine or needles in medical bags, nitrate, or kerosene lamps, are removed or mitigated to the extent possible.				
					X						The building is located at least 100 miles from any nuclear reactor or research facility.				
					X						The building is located more than ¼ mile from an electric power plant.				
					X						The park employs a trained hazardous waste coordinator.				
						X					The building is located more than ¼ mile from a major transportation route, such as a highway, railroad track, or airport flight path.				
						X					Major construction or road repair, if scheduled, is more than ¼ mile from the building.				
						X					Parking lots are located more than 100 feet from the building.				
						X					Docks and airports are located more than ¼ mile of the building.				
							X				The building is located out of sight of major symbolic monuments, such as the Statue of Liberty, Mount Rushmore, or similar visual focal points for protest.				

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							X				The park has trained all staff in how to react in case of terrorism and how to evacuate safely.				
							X				The building is within rapid access area of park police and security staff.				
							X				The building has a well-lit exterior at night.				
							X				Issuing of keys to museum storage spaces and exhibit spaces is strictly controlled by the use of a signed hand receipt (e.g. DI-105 or equivalent form).				E2
							X				Keys to museum storage spaces, exhibit cases, and work and research/reference spaces are issued to only those employees having direct responsibility for the collections.				E1
							X				Installed intrusion detection systems are inspected and maintained on a regular schedule to ensure they are fully operational.				E9
							X				The building site is free from mass gatherings such as carnivals, rock concerts, mass camping events, or similar activities.				
									X		The building is outside an earthquake zone.				B22
									X		Restraining bars or cords or doors are attached to edges of shelves to prevent objects from falling off shelves during an earthquake.				B23
									X		The building was built or modified to be "earthquake ready" by the installation of sheathing for roofs and floors, bracing for foundations and walls, and track lighting; by framing and bracketing of building elements in steel; and by reinforcing of crawl spaces, windows, and chimneys.				
									X		The museum staff are fully trained in how to act in case of an earthquake.				
									X		The building is located at least 5 miles from an inactive volcano and at least 50 miles from an active volcano or hot spring.				
									X		The building is located away from valleys, rivers, and other natural funnel-like areas that would lead lava and mudslides to the building.				
											Other				

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