MA Department of Conservation and Recreation
Office of Cultural Resources
Best Management Practices

Disaster Planning and Response for Cultural Resources

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Goal: Minimize damage to significant cultural resources during natural and man-made disasters; prevent total loss of public resources; plan for recovery.

Toppled tree and damaged markers in Quabbin Park Cemetery after a 2010 winter storm

Introduction

Disaster can strike at any DCR property, any time, and cultural resources are particularly vulnerable to natural and man-made disasters due to their age and construction. High wind and surf can erode archaeological sites and burials; wind, snow and ice can devastate historic buildings and landscapes, and storms can expose archival collections (papers, photographs, art and furniture) to the elements. Historic properties are often the targets of vandals and can be subject to anything from arson to an act of terrorism. While DCR cannot prepare for every disaster, some common practices can ensure cultural properties are protected from the typical events seen in Massachusetts. Much of this is good maintenance, communication and training.

These Best Management Practices are designed to provide guidance before, during and after an emergency to avoid the loss of significant public resources. Even in disaster scenarios, all may not be lost. The Office of Cultural Resources (OCR) can help identify specialists, equipment, tools and techniques to recover from most disasters. OCR can also help assess damage and develop cost estimates that reflect the need for a higher preservation standard.

Basic principles:

- Good maintenance = disaster preparation
- Protecting cultural resources should never take precedence over the safety of staff or the public.
- Cultural resources, especially collections, may look unsalvageable, but never destroy resources without first contacting OCR.
- Recovery from disaster may require specialized materials and construction methods to be consistent with preservation standards.
- Cultural resources need protection before, during and after a disaster strikes.

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Guidelines

Planning

- Increase awareness by determining the types of risk most common to your property. These may include:
    - Coastal properties – Flood, Wind, Snow and Ice
    - Riverfront properties and Steep slopes – Flash flood, washout, mudslides
    - All properties – Fire, snow and ice, wind, flash flood, opportunistic looting and vandalism

- Take inventory of the historic property – recent photographs, including interiors, collections, and landscapes. If collections have been inventoried, keep a back up copy of the inventory in a safe place.

- For historic buildings and structures – know where utility shut offs are located, label and post diagram on site and in Headquarters.

- Identify materials and equipment needed during disaster. For cultural properties this might include:
    - Installing or locating fire extinguishers
    - Having plastic sheeting on hand to cover collections

- Outline a plan for monitoring historic properties during storm events and how to report any incidents.

- Prepare a list of DCR personnel and others who may need to be contacted in case of emergency. This may include OCR staff, local and state police (in cases of looting, or washout of burial sites); fire departments, etc.

- Train staff on all of the above.

Hazard Mitigation (Before Disaster Strikes)

<u>Long-Term Preparation</u>

- Clear drainage features – storm drains, culverts, swales, gutters and downspouts.

- Stabilize slopes – plantings, walls and rip rap may be needed to prevent washouts; sandbags may provide temporary reinforcement.

- Prune trees, remove dead limbs and hazardous trees (work with OCR to document landscape treatment and plan for replacements, if needed).

- Prepare designed landscapes and sensitive plant materials for winter, including wrapping woody plants, hedges, etc. to prevent damage from heavy snow and ice.

- Check fire extinguishers – locate in every historic property (with appropriate signage) and/or staff vehicle, inspect and recharge regularly, train all staff on locations and proper use.

- Install or maintain properly grounded lightning protection.

Short Term-Preparation

- Secure site furnishings – any object can become a deadly and dangerous projectile during high wind. Move inside or secure all outside furniture, trash receptacles, planters, tools, wood piles.
- In vacant properties in potential flood zones, turn off utilities (electric, gas, water) in advance of event.
- Secure collections and furnishings away from windows and up off of floors on lower levels.

Response (During the Event)

- Monitor all historic properties and collections
- Buildings (Occupied and Vacant)
    - Clear snow from shallow pitched and flat roofs during major snow events, particularly during storms of heavy, wet snow or snow followed by rain. Do not walk on roofs to remove snow.
    - Clear roof eaves to prevent ice dams.
    - Clear downspouts of snow and debris to prevent back up of snow and ice.
    - Check attics and basements for water during heavy rain; activate sump as needed.
- Landscape
    - Keep drainage features clear of debris.
    - Avoid driving trucks and heavy equipment over historic landscapes or archaeological sites during period of heavy rain or when the earth is otherwise saturated.
    - Remove debris from roads and driveways to ensure emergency access.
    - Check and maintain sandbags.

Recovery (Following the Event)

- Call OCR to report damage to a cultural resource and initiate response.
- Do not destroy cultural resources.
- Staging areas, access roads, and other temporary uses should be located away from sensitive archaeological sites, historic landscapes, cemeteries, and historic buildings. Avoid driving heavy equipment over critical root zones of mature trees.
- Historic collections and buildings should be monitored for mold and insect infestation, especially if clean up and recovery are delayed.
- Work with OCR to document damage and recover materials after sites are declared safe for entry.
- Work with OCR to develop repair estimates that reflect the level of historic preservation treatment required.