



Guide to Expanding Mitigation

MAKING THE CONNECTION TO CEMETERIES



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Cemeteries are important cultural resources. They are tangible connections to collective histories and physical memories of long-lost loved ones. Emotional ties make it even more difficult when cemeteries are damaged in disasters. When cemeteries are not regularly maintained, the impacts from hazards like floods, tornadoes and wildfires can compound years of deterioration.

Cemetery experts include historians, archaeologists, stone conservators, planners, preservationists and more. Their wealth of knowledge can assist emergency managers with approaching mitigation in a way that is rooted in community history.

This *Guide to Expanding Mitigation* provides recommendations for working with the public and private actors in the cemeteries sector to support hazard mitigation, especially in the planning process and project development. This guide is designed to help community officials initiate a conversation about mitigation investments that can help make cemeteries more resilient.



This *Guide to Expanding Mitigation* is part of a [series](#) highlighting innovative and emerging partnerships for mitigation.

HOW NATURAL DISASTERS AFFECT CEMETERIES

Loss of life and property from disasters are certainly tragedies. While the inhabitants of cemeteries are not affected by those personal losses, the loss of heritage and history when cemeteries are affected by disasters are cultural tragedies. Cemeteries are important physical records of statistical and sociological community histories. Losing a cemetery can be like losing a community identity, even more so for communities that have declined or no longer have a physical presence beyond what remains of their cemeteries.

Cemeteries are just as vulnerable to disasters as other community infrastructure. The effects of disasters include redeposition of soil and flood borne debris; gravestone displacement or damage; and disinterment of caskets, sometimes far from their original location. The force of water can displace 1,500 pounds of soil for each foot of floodwater. This can dislocate caskets and open vaults. Tornadoes can topple trees and carry debris as large as vehicles and structures, which may topple stones and damage or destroy mausoleums. Erosion from storm surge and rising seas can cause entire coastal cemeteries to crumble. From earthquakes to mudslides to wildfires, any hazard your community faces has the potential to devastate your cemeteries.

In most of the United States, cemetery owners are not required to produce disaster preparedness or hazard mitigation plans. This lack of preparation leaves them vulnerable when disasters strike. When communities think through their mitigation initiatives, cemeteries are often overlooked. How can communities justify investing in cemetery projects when they could use those funds for more widely beneficial improvements to critical facilities or infrastructure?



CEMETERIES AND CLIMATE CHANGE

Cemeteries are not immune to the way climate change is magnifying disasters. Wildfires are disintegrating gravestones in California, and melting permafrost is turning cemeteries to swamps in Alaska. Stronger storms and rising seas are making flooding and erosion more persistent problems for coastal cemeteries. In Hoopersville, Maryland, the Anchor of Hope Cemetery is eroding into the Chesapeake Bay. The Great Flood of 2016 damaged 35 graveyards in Louisiana, dislodging caskets from water-clogged vaults. Hurricane Sandy damaged graves on Boston Harbor's Gallops Island, exposing the burial sites of 19th century smallpox patients. Without mitigation, these climate impacts threaten the long-term viability of cemeteries.





ACTIVE VS. HISTORIC CEMETERIES

It should be noted that historic and active cemeteries each have unique approaches when it comes to mitigation. Active cemeteries are regulated from a public health perspective and have stronger ties to funeral home directors, coroners, medical examiners and cemetery boards. Their funding streams are steadier, and their staff capacity is more consistent so they may be able to take on more ambitious mitigation efforts. Their active status means they have more frequent interface with the public. This can be good because public interest can encourage more innovative practices, but it can also be an obstacle if the cemetery's actions are deemed controversial. Ultimately, active cemeteries are businesses and have to meet certain standards to remain in operation, so they are more likely to implement mitigation actions if necessary.

Historic cemeteries are much older than active cemeteries and are sometimes abandoned or under-maintained. They can also be active but often to a lesser degree, and sometimes have unmarked graves or are not featured on community maps. Historic cemeteries hold special cultural value and may be the final resting place of the community's notable historic figures. They also act as community green space. Oversight of historic cemeteries varies. If they are smaller or more obscure, their operations may be managed by historical societies or volunteer groups, sometimes on an ad hoc basis. More so than contemporary active cemeteries, historic cemeteries have to balance their mitigation actions with preservation. Their mitigation efforts should be tailored to protect delicate structures and multifaceted histories. Big moves like altering

the landscape or building protective structures may face greater opposition because of the perception that they will disrupt the historic character of the cemetery. Because of their complex challenges and need for greater assistance in mitigation, the recommendations in this guide apply primarily to historic cemeteries rather than active cemeteries.



How can cemeteries in your community get started with mitigation?
Begin by evaluating their risk:

- Are they in a flood zone?
- Are they on steep slopes or in areas prone to erosion?
- How does their drainage function after a major rainstorm?
- Is the vegetation maintained and are the trees free from loose branches?
- Are the access roads in good condition? Would they be passable in a disaster?
- Have they assessed the gravestones and mausoleums for possible problems?
- Do they have trained staff to aid in recovery or do they rely solely on volunteers?
- Do they have funds set aside for hazard mitigation and disaster recovery?
- Have there been any impacts from previous hazard events?
- Are maintenance activities contributing to damage (e.g., faulty sprinkler systems causing flooding)?



CHALLENGES FOR CEMETERIES

Talking about cemeteries can be challenging. Death is a sensitive — often taboo — topic that can bring up uncomfortable feelings. For centuries cemeteries have served as places to mourn and to honor the dead; they are thought of as a “final resting place.” Although cemeteries are a difficult topic, it is important for emergency managers and others working in the mitigation space to consider how they can help cemeteries build resilience. Cemeteries are touchstones to the past and valuable intellectual real estate; they should be protected. Cemetery stakeholders could use the most support with documentation, funding and regulation challenges.



CEMETERY RELOCATION AND “CULTURAL RETREAT”

What happens when cemeteries are at risk to hazards and need to be modified or moved to be protected? The idea of relocating cemeteries is not new, and although it can be upsetting to think of exhuming graves, it is something communities must consider if their cemeteries are threatened. The Tennessee Valley Authority relocated about 20,000 graves in the 1930s to protect them against flooding. Fort McHenry in Baltimore, Maryland relocated the cemetery on its grounds due to erosion and now has a memorial at Loudon Park National Cemetery in its place. The reality is that some cultural resources are in vulnerable areas that are unsafe to continue inhabiting, even for the dead. Communities need to balance preserving cultural resources with understanding when these important places cannot be saved.

DOCUMENTATION – Documenting the conditions of cemeteries is an important step in mitigation. Keeping records of grave locations can help inventory potential hazards as well as navigate the chaos post-disaster. Documentation is conducted on a regular basis in active cemeteries but can be a challenge for historic cemeteries, especially those with unmarked graves or inconsistent maintenance. Sometimes cemetery caretakers do not have the resources or technology to create accurate maps. Smaller historic cemeteries often rely on the work of volunteers to document their grave sites. While they are well-meaning and eager, their work may not be of high enough quality to inform mitigation investments or support grant applications. It is also important to document the features of the cemetery landscape: plantings, water features, access roads, fencing, and associated structures, such as a gate house. These features should also be preserved and protected.

FUNDING – Because many historic cemeteries are supported solely by small organizations like friends groups, historical societies or volunteers, they have trouble accessing funding for maintenance or mitigation projects. In their day-to-day operations cemeteries need to consider landscaping, gravestone maintenance, pest management, fencing/security, and more. In addition, cemeteries should be well-kept to avoid vandalism or trespassing. If cemeteries are considering larger projects, they often turn to donors or government entities. For grant applications they usually need a government or non-profit partner to apply with them.

REGULATION – How cemeteries are regulated and what kind of legislation governs them varies from state to state. The scope of the regulation also depends on whether they are publicly or privately owned and if they are affiliated with a religious organization. If cemeteries are listed in the National Register of Historic Places or on a state or local register, communities might have to coordinate with their State Historic Preservation Office or local government to comply with historic preservation regulations. Some state cemetery boards oversee cemeteries and mortuaries but have not updated their regulations in several decades or their regulations do not function well in a disaster environment. Many states regulate steady-state operations but do not require cemeteries to prepare for disasters. Without official guidelines for disaster planning, cemeteries are often left without clear direction for mitigation.



OPPORTUNITIES FOR COLLABORATION

Cross-agency communication is important for connecting cemeteries with the information and resources they need for mitigation. Cemeteries that rely solely on volunteer groups would especially benefit from the expertise of emergency managers and hazard mitigation experts. For example, city or county planning departments have digital datasets that can be used for mapping hazard vulnerability. Sharing that spatial data with cemetery stakeholders can aid in their documentation efforts.

When embarking on the mitigation planning process, consider including the following individuals and/or organizations:

- Cemetery volunteers/ friends groups
- Historical/genealogical societies
- State cemetery board
- Historic preservation offices
- Archaeologists
- Stone conservators
- Certified arborists
- Cemetery management companies
- Funeral home directors and associations
- Coroners or medical examiners

Cemeteries at risk to hazards may be located near critical infrastructure or other structures at risk to the same hazard. When mitigating the risk to the built environment, some cemetery land could be used to protect nearby infrastructure. Communities may be able to mitigate for the structures and the cemetery as a collaborative project. For example, if a coastal cemetery is eroding into the sea and there are residential properties on the other side, the cemetery itself could be used in mitigating coastal erosion risk. Talk to your local emergency manager or local officials about additional mitigation actions for cemeteries.

Outreach is key to building interest and awareness for mitigation in cemeteries. Community officials and emergency managers can partner with cemetery organizations to educate their volunteer groups about proper mitigation and preservation techniques. Anne Arundel County, Maryland has a citizen stewardship program to help identify unmarked cemeteries. People can use an online form to track basic location data and historic significance and complete a condition assessment to document issues like flooding. This information is being used to build a county database of cemeteries, documentation that will be helpful for mitigation planning



CEMETERIES ARE THE PLACE TO BE

In addition to their cultural value, cemeteries also have potential as economic drivers. Their open space, historic charm and interesting landscape can serve as event venues and educational experiences. For example, Laurel Hill Cemetery in Philadelphia hosts movie nights, walking tours, gardening classes, and an annual Gravediggers' Ball. All its events offset the cost of restoration and preservation while promoting the historical significance of Laurel Hill Cemetery.

Just as emergency managers can support cemeteries in their mitigation efforts, cemetery experts have skills and knowledge that can strengthen emergency management. Volunteer groups who are collecting data could also be tracking risk to hazards like erosion. Their historical knowledge makes cemetery experts great resources for how the community has fared past disasters and which groups may be most vulnerable. Engaging them in the mitigation process will make for a more well-rounded approach to building community resilience that both plans for the future and honors the past.

RESOURCES

Guides to Expanding Mitigation

<https://www.fema.gov/guides-expanding-mitigation>

Link to all available Guides to Expanding Mitigation.

FEMA Hazard Mitigation Planning

<https://fema.gov/hazard-mitigation-planning>

Review standards and guidance for the planning process.

Chicora Foundation

<https://www.chicora.org/cemetery-preservation.html>

Access additional guidance for cemetery preservation.

National Center for Preservation Technology and Training

<https://www.ncptt.nps.gov/blog/disaster-preparedness-and-response-for-historic-cemeteries/>

Learn about disaster preparedness and response for historic cemeteries.

Association for Gravestone Studies

<https://www.gravestonestudies.org/>

Access publications, conferences, workshops and more.

Anne Arundel County, Maryland Citizen Stewardship Program

<https://www.aacounty.org/departments/planning-and-zoning/cultural-resources/Citizen-Stewardship-Program>

Learn how volunteers are trained to assist with documenting the county's historic cemeteries.

Find a Grave

<https://www.findagrave.com/>

Access and contribute to the world's largest gravesite collection.

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ENGAGE WITH US

Are you a state, local, tribal or territorial official interested in making the connection between cemeteries and hazard mitigation? Are you a cemeteries professional interested in connecting with local officials to reduce risk from hazards? Please contact us at FEMA-ExpandingMitigation@fema.dhs.gov.



