



# **FLOOD MITIGATION GUIDE: MARYLAND'S HISTORIC BUILDINGS**



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*Cover Image: Cove Point Lighthouse, 2003. Lusby, Calvert County.*



## PREPARATION

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Figure 1 - Sandy Point Shoal Light Station. Annapolis, Anne Arundel County.

## PREFACE

### A. PROJECT GOALS

The State of Maryland, with its extensive tidal shoreline, riverine shorelines and watersheds, is highly vulnerable to flooding from rising seas, subsidence, coastal storms, flash flooding, riverine flooding, and stormwater runoff. Often developed near waterways, historic communities are particularly vulnerable to flooding, which, in many areas, is increasing in frequency and volume over historic trends due to climate change.

Today, preservation planners and advocates who wish to help historic properties withstand flooding may find themselves confused and hindered by complex and contradictory policies, regulations, and practices. To help bridge the gaps between floodplain management, emergency management, climate adaptation, and historic preservation, this *Guide* was undertaken and administered by the Maryland Historical Trust (MHT) with financial assistance provided by the National Park Service (NPS) under the Historic Preservation Fund Grants to Provide Disaster Relief to Historic Properties Damaged by Hurricane Sandy.

We have chosen to present this *Guide* in a sequence that first explains floodplain management and then follows the steps of the emergency management cycle: planning, response, recovery, and mitigation. Given the projected impacts of climate change on historic properties, we have added adaptation as an additional step. Following this sequence helps us demonstrate that the interaction of preservation and emergency management needs to occur at each of these steps to be truly successful. This *Guide* therefore creates a framework through which local preservation planners and advocates can better understand floodplain management and engage in local and state emergency management processes. As this *Guide* demonstrates, floodplain and emergency management efforts are largely locally-focused, and as such, it is largely up to local planners and advocates to ensure that historic preservation has a seat at the table.



## B. PROJECT APPROACH

### B.1 THE PROJECT TEAM

The project team was led by Preservation Design Partnership, LLC (PDP) of Philadelphia, PA with Dominique M. Hawkins, AIA serving as the Project Manager and principal author. Assistance was provided by Sarah Blitzer who conducted preliminary research and participated in site visits, as well as Mary Dempsey Lau, AIA, Sarah Ripple and Dianne Loftis, all of PDP. Wendy Lathrop, PLS, CFM of Cadastral Consulting shared her floodplain expertise with the project team. The project team was retained by MHT pursuant to a Request for Proposal process.

At MHT, the staff working group was composed of individuals representing the organization's major programs and disciplines. Working group members participated in meetings with PDP, participated in site visits for this *Guide*, provided input on drafts, and facilitated contact with local communities vulnerable to flooding:

Elizabeth Hughes, Director and State Historic Preservation Officer

Anne Raines, Deputy Director / Deputy State Historic Preservation Officer

Michael Day, Deputy Director / Deputy SHPO, Chief of Office of Preservation Services (OPS)

Marcia Miller, Chief of Office of Research, Survey, and Registration (ORSR)

Nell Ziehl, Chief of Office of Planning, Education, and Outreach (OPEO)

Beth Cole, Administrator, Review and Compliance (in OPS)

Peter Kurtze, Administrator, Evaluation & Registration (in ORSR)

Jennifer Sparenberg, Hazard Mitigation Officer (in OPEO)

The MHT working group was coordinated by Anne Raines, and Nell Ziehl, and Jennifer Sparenberg provided substantial additional content for and revisions to the *Guide*, drawing on MHT's experience via its statewide Weather It Together program, which provides funding and technical assistance to historic communities grappling with hazard mitigation, emergency response and recovery, and climate adaptation. Inspired by the pioneering work undertaken by the City of Annapolis in planning for sea-level rise, the Weather It Together program was also supported by the National Park Service under the Historic Preservation Fund Grants to Provide Disaster Relief to Historic Properties Damaged by Hurricane Sandy.

## B.2 METHODOLOGY

The preparation of this *Guide* occurred between September 2015 and June 2018 in three phases:

- **Phase I: Research and Data Collection** – The project team reviewed reports and publications related to past flooding in Maryland; the existing federal and State of Maryland regulatory framework related to emergency management and historic preservation; the current hazard mitigation process; and examples of best practices for flood mitigation from the United States and abroad. A synopsis of the team’s findings is presented in [Appendix B - Annotated Bibliography](#).
- **Phase II: Site Visits / Local Outreach** – For the site visit phase, the project team, accompanied by representatives of MHT, visited thirteen communities with a range of flooding types and challenges across the State. Each site visit included a tour as well as a meeting with local representatives who described the changes to their communities, past flood events, and any strategies being implemented to address flooding. The findings from each community, as well as potential mitigation strategies, are included in section [Appendix A - Case Studies: Maryland’s Historic Communities](#).
- **Phase III: Preparation of this Guide** – Following the research and site visit phases, the project team worked closely with MHT to prepare the body of this *Guide*. The *Guide* draft was then circulated for feedback to representatives of state agencies and organizations with experience in flooding and historic preservation, and revised with input from these reviews.

Although MHT recognizes the vulnerability of archaeological sites and landscapes to flood damage, the focus of this *Guide* is the long-term protection of historic buildings. Some strategies regarding the collection of threatened archaeological resources are addressed in the Shady Side site visit report in [Appendix A - Case Studies: Maryland’s Historic Communities](#). MHT intends to prepare more thorough guidance for archeological sites and natural hazards as a follow-up to this *Guide*.

## C. FUTURE PLANS

This *Guide* will be used to inform MHT programs, including the technical assistance offered by MHT through its Weather It Together program, as well as multi-agency state efforts through the Maryland Commission on Climate Change’s Adaptation and Response Working Group. MHT intends to update the *Guide* as state and federal policies and regulations change. Ideally, in time, the *Guide* will help underpin educational efforts and local policies geared towards property owners who wish to protect their individual historic properties.







Figure 3 - August 2017 public meeting for Annapolis's Weather It Together initiative.

## HOW TO USE THIS GUIDE

### What is it?

This *Guide* is a “road map” to help local governments and preservation advocates protect historic properties in their communities from flooding. While it addresses specific strategies such as floodproofing and elevating buildings that may be useful for property owners, the *Guide* focuses on what communities can do before, during, and after a flood to ensure that historic preservation is considered within the ongoing process of emergency management. To that end, the *Guide* provides a primer on issues such as flooding, floodplain management, and the emergency management cycle, and each section of the *Guide* illustrates ways to incorporate and address the protection of historic buildings within the existing regulatory framework. The *Guide* does not prescribe specific treatments, but rather suggests and analyzes options for decision-making.

### Who is it for?

Although geared primarily toward local preservation planners, the *Guide* should benefit anyone attempting to meet the combined goals of historic preservation and emergency management, including state and local planners, floodplain managers, emergency managers, historic preservation consultants, preservation advocates, and public officials. The Maryland Historical Trust (MHT) will use the *Guide* to inform its own programs, including project review, local government assistance, and incentives.

### Where do I start?

The *Guide* can be read cover-to-cover or according to the needs and interests of the reader. Each section is relatively self-contained. For instance, a local government prone to storms and occasional, devastating floods may wish to start with Response and Recovery, to ensure that historic preservation is considered within its emergency response plans. (*Refer to Response & Recovery, page 2.39.*) The five-year hazard mitigation plan update required by FEMA is the perfect time to implement some of the recommendations outlined in Planning and Preparedness. (*Refer to Planning & Preparedness, page 2.3.*)

Historic preservation commission staff confused about property owner requests to reduce flood insurance premiums can read up on floodplain management and the National Flood Insurance Program. (*Refer to Floodplain Management, page 1.15, and National Flood Insurance Program, page 1.17.*) And for planning offices considering code updates or specific mitigation treatments for historic properties, the *Guide* offers advice in the sections related to Mitigation and Adaptation. (*Refer to Mitigation, page 2.49, Adaptation, page 2.65, and Chapter 3: Selecting Preservation-Sensitive Mitigation Options.*)

Within each chapter, major sections begin with a content description to help the reader identify the most appropriate starting point. The following is a summary of each chapter.

- 1.0 Flooding & Floodplain Management** provides an overview of the history of Maryland's waterfront development, major storm events in Maryland, types of flooding, trends, and effects. This chapter describes floodplain regulation and flood insurance, explains how flood maps are used, and outlines potential conflicts between flood insurance requirements and historic preservation.
- 2.0 Historic Preservation & Emergency Management** describes ways to consider and plan for historic properties within the emergency management cycle (planning and preparedness, response and recovery, mitigation), as well as climate adaptation. It also includes a brief introduction to the emergency management regulatory context and key players at all levels of government.
- 3.0 Selecting Preservation-Sensitive Mitigation Options** describes and outlines the pros and cons of different treatments, on both a community-wide level and for individual properties.
- Appendix A. Case Studies: Maryland's Historic Communities** provides snapshots of thirteen Maryland communities, describing the types of flooding they experience, the effects of this flooding, and, in some cases, their flood mitigation strategies. Because the featured communities are geographically dispersed with a variety of historic property types, and are prone to flooding from a variety of sources, the case studies will help readers understand how flood mitigation strategies can function in a range of settings.

### **Where can I learn more?**

For readers who wish to explore the *Guide's* topics in more depth, the Annotated Bibliography includes a range of reports and publications related to the history of flooding in Maryland; the federal and State of Maryland regulatory framework for flooding and historic preservation; documents related to flooding and the hazard mitigation process; and examples of best practices for flood mitigation from the United States and abroad. (*Refer to Appendix B: Annotated Bibliography.*) Most of the publications included are available on the internet, facilitating in-depth review. As part of its Weather It Together program, MHT provides training materials, case studies and other resources for local governments engaged in historic preservation, emergency management and climate adaptation. Readers are also welcome to contact MHT for technical assistance and information on training opportunities.