



National Park Service  
U.S. Department of the Interior

Technical Preservation Services

# Disaster Recovery for Historic Properties

Jennifer Wellock

**REAL PLACES 2020 Conference**  
Austin, Texas

# Learning Objectives

- Learn how to plan to protect a historic building. ✓
- Anticipate and identify typical damage caused by rain and wind.
- Understand how the effects of deferred maintenance are exacerbated by a natural disaster.
- Discover how to get help and look for rehab and planning funding. ✓

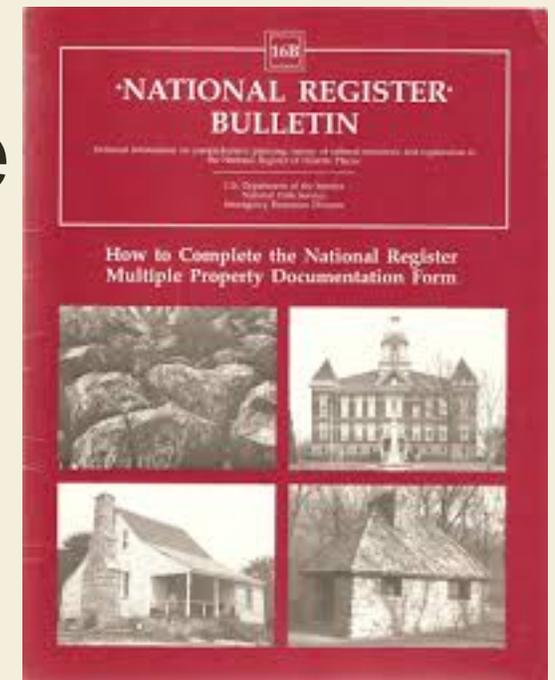
# Why the National Park Service?

- Under the National Historic Preservation Act, a number of federal agencies are tasked with various roles and responsibilities.
- The Secretary of the Interior was named in the Act and delegated the National Park Service with the largest share of preservation responsibilities.
- As the US doesn't have a the equivalent of a "Ministry of Culture" the NPS role as keeper of historical parks made us the likely leader.

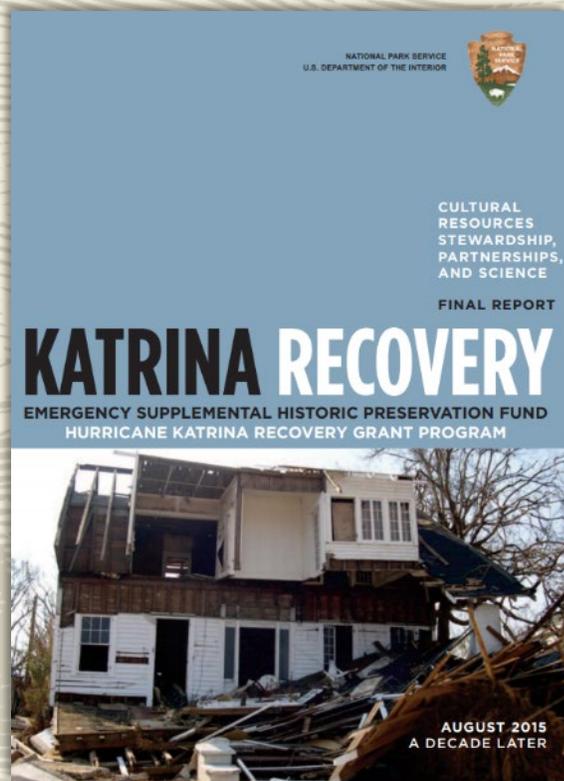
54 U.S.C. §§ 300101 to 307108

# NPS and Preservation Role

- Creation of the National Register of Historic Places
  - Creation of Federal actions to register properties and protect them where possible (Section 110)
  - Creation of process to evaluation federal actions (Section 106)
- State and Tribal Programs
- Recognized partners: Certified Local Governments
- Guidance for Federal Agencies and Standards for preservation of Federally owned properties.
  - Technical Assistance
  - Education and Training (NCPTT)
  - Grants & Loans....



# NPS & Disaster Grants



Program Approach Statement  
Updated: June 9, 2014

## National Park Service 2013 Hurricane Sandy Disaster Relief Grants Program Approach Statement

This version of the Program Approach Statement is an update. This version replaces all previous versions. Del applicable. Additions are underlined and have been made to provide clarification for existing policy. Appendices have allowable uses of Emergency Supplemental HPF grants to program reporting forms.

NEWS RELEASE

## National Park Service Announces \$48.5 Million in Assistance for Communities Affected by Hurricanes Harvey, Irma, and Maria

**Background.** Public Law 113-2 appropriated \$50 million (HPF) for historic preservation projects providing relief for major disaster declaration pursuant to the Robert T. Stafford Assistance Act (42 U.S.C. 5121 et seq.), resulting from Hurricane Sandy. After the mandatory sequestration impacting Fiscal Year 2014, the available funds was reduced to \$47.5 million.

The Federal Emergency Management Agency (FEMA) issued major disaster declarations for 12 States and the District of Columbia after Hurricane Sandy. In addition to the major disaster declarations, FEMA further designated individual counties for Individual Assistance and/or Public Assistance. In counties designated for Individual Assistance, FEMA will provide direct assistance to individuals and families. In counties designated for Public Assistance, FEMA will provide direct assistance to State and local governments for emergency work on disaster-damaged facilities. Among the 12 States and DC that received major disaster declarations, there were only four States in which FEMA made Public Assistance available. These States are Connecticut, Delaware, Florida, and Puerto Rico. The remaining eight States and the District of Columbia are eligible for Individual Assistance. The National Park Service (NPS) interprets this



# How to Plan: National Response Framework

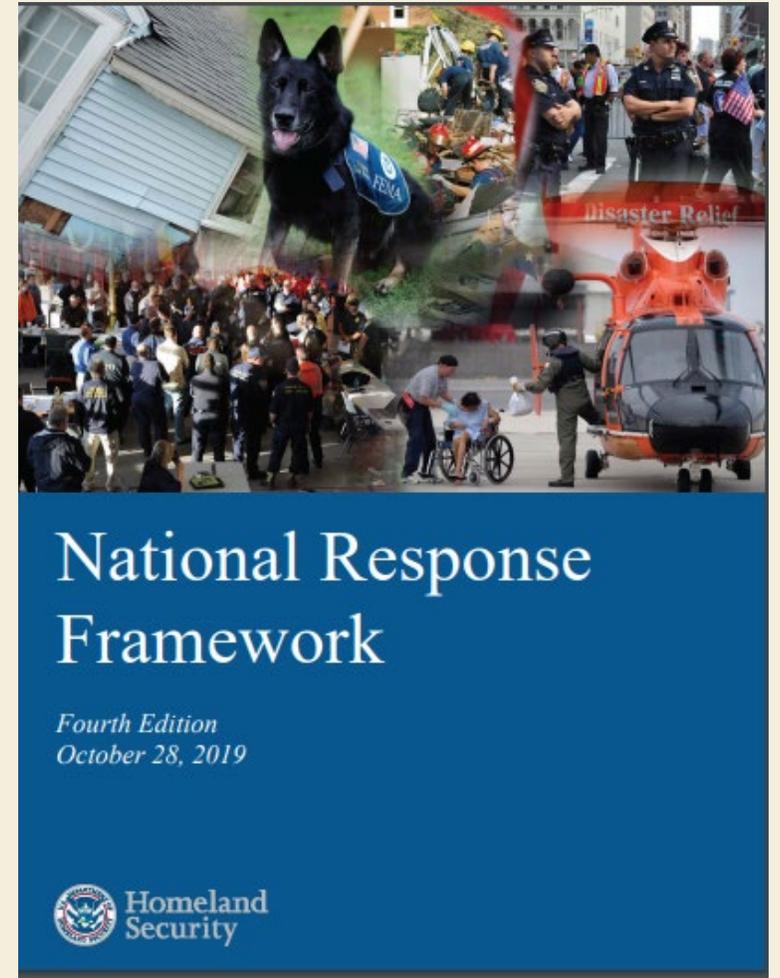
Federal Emergency Management Agency, Department of Homeland Security, tasked with organizing this guide to help National Preparedness.

Comes from the National Incident Management System (NIMS).

Provides for a unified national response to disasters and emergencies.

Structure and procedures address incidents where Federal support is coordinated under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act)

A basic premise of the **National Response Framework** is that incidents are generally handled at the lowest jurisdictional level possible.



# How to PLAN

- A basic premise of the **National Response Framework** is that incidents are generally handled at the lowest jurisdictional level possible.
- <https://www.fema.gov/media-library/assets/documents/117791>
- The NRF is structured to help jurisdictions, citizens, nongovernmental organizations (NGO), and businesses develop whole community plans, integrate continuity plans, and build capabilities to respond to cascading failures among businesses, supply chains, and infrastructure sectors, as well as collaborate with the private sector and NGOs to stabilize community lifelines and enable restoration...
- (of critical services, not necessarily historic buildings)
- Discusses other Agencies roles (Emergency Support Functions).

# Plans = Action & Funding



## Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning

State and Local Mitigation Planning How-To Guide

FEMA 386-6 / May 2005



## CITY OF NEWPORT, RHODE ISLAND



## HAZARD MITIGATION STRATEGY

*"Creating a resilient community that lives in harmony with nature's varying cycles and processes."*

September 2008

# Are You Ready?

## Emergency Preparedness Fair

Mater Academy Charter  
High School  
7901 NW 103rd Street  
Hialeah Gardens, FL 33016

Sunday,  
September 29, 2013  
10 a.m. - 2 p.m.



**FREE**  
ADMISSION

Make a difference for yourself, your community and our nation. Do one of the following:

- Make a family communications plan
- Build an emergency supply kit
- Get involved in preparedness in your community
- Attend the Emergency Preparedness Fair

Exhibits

Demonstrations

Handouts



Mater Academy  
Emergency  
Preparedness & Disaster  
Response Fair

SCAN ME



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# Homework: What does my community have?



**CITY OF AUSTIN**

## HAZARD MITIGATION PLAN UPDATE



September 2010



MAINTAINING A SAFE, SECURE AND SUSTAINABLE COMMUNITY



**CITY OF AUSTIN**

## Hazard Mitigation Plan Update



*Maintaining a Safe, Secure, and Sustainable Community*



PLAN YOUR RECOVERY

Draft: March 2016

**TRAVIS COUNTY**

## Hazard Mitigation Plan Update



*Mitigating Risk for a Safe, Secure, and Sustainable Future*



August 29, 2017

# Identify the Threat

Flooding represents the greatest natural hazard facing the City of Austin. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to the Floodplain Management Plan and Floodplain Ordinance, which provide a framework for corrective and preventative actions, the City has also established similar projects and programs under the broad goal of reducing flood-related impacts.



# City of Austin- Hazard Mitigation Plan

- Chapter 7: Capability Assessment.
- Historic Preservation Plan A historic preservation plan is intended to preserve historic structures or districts within a community. The City of Austin has a historic preservation plan, which is overseen by the City of Austin Historic Preservation Office (CHPO). The CHPO protects and enhances neighborhoods, buildings and sites that reflect elements of Austin's cultural, social, economic, political and architectural history.
- An overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards to identify the most effective way to reduce future damages.
- This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of a hazard-prone area.

City of Austin – Action #10	
<b>Proposed Action:</b>	Have a workshop on ways to retrofit historic homes to mitigate weather related hazards.
<b>BACKGROUND INFORMATION</b>	
<b>Site and Location:</b>	Citywide
<b>Risk Reduction Benefit:</b> <i>(Current Cost/Losses Avoided)</i>	Educate residents and give them resources on how to retrofit their existing home to mitigate potential effects.
<b>Type of Action:</b> <i>(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)</i>	Education and Awareness

MITIGATION ACTION DETAILS	
<b>Hazard(s) Addressed:</b>	Flood, Thunderstorm Wind, Drought, Extreme Heat, Winter Storm, Tornado, Hail, Hurricane Wind, Wildfire
<b>Effect on new/existing buildings:</b>	Educate residents and encourage them to implement mitigation actions on their own properties
<b>Priority (High, Moderate, Low):</b>	Moderate
<b>Estimated Cost:</b>	TBD
<b>Potential Funding Sources:</b>	City, Texas Historic Commission (Certified Local Government Grant), Preservation Austin
<b>Lead Agency/Department Responsible:</b>	Planning and Zoning, Historic Preservation
<b>Implementation Schedule:</b>	2015-2020
<b>Incorporation into Existing Plans:</b>	Emergency Operations Plan

COMMENTS:
<b>ADDITIONAL CONSIDERATIONS:</b>
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)
Socially Acceptable = 5; Technically Feasible = 4; Administratively Possible = 5; Politically Acceptable = 5; Legal = 4; Economically Sound = 3; and Environmentally Sound = 5

Action 10: City of Austin recommends Workshops on ways to retrofit historic homes to mitigate weather related hazards.

Action 11: Survey and map historic resources within flood prone areas.... By implementing Regulatory actions (such as planning and zoning) this will provide an opportunity to ensure that future growth and development avoid or minimize risk of hazard-related damage to the historical property

Action 12: Create a grant or rebate program to encourage energy retrofitting buildings within areas that are designated as Historic to encourage energy retrofitting that is compatible to historic properties.

# Planning adaptations for historic buildings

- Learn how to plan to protect a historic building
  - Identify the risk (water, wind, fire) and then balance the adaptation with the historic significance of the property.





# Secretary's Standards for the Treatment of Historic Properties

## Guidelines

Preservation  
Briefs

Interpreting the  
Standards  
Bulletins

Preservation  
Tech Notes

# NPS Standards and Guidelines, in general

## MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

### RECOMMENDED

### NOT RECOMMENDED

**Identifying, retaining, and preserving** masonry features that are important in defining the overall historic character of the building (such as walls, brackets, railings, cornices, window and door surrounds, steps, and columns) and decorative ornament and other details, such as tooling and bonding patterns, coatings, and color.

Altering masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Replacing historic masonry features instead of repairing or replacing only the deteriorated masonry.

Applying paint or other coatings (such as stucco) to masonry that has been historically unpainted or uncoated.

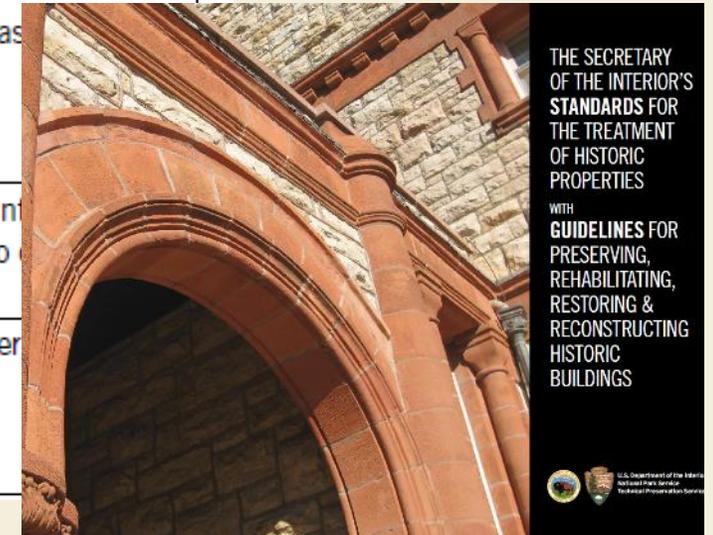
Removing paint from historically-painted masonry.

**Stabilizing** deteriorated or damaged masonry as a preliminary measure, when necessary, prior to undertaking preservation work.

Failing to stabilize deteriorated or damaged masonry until work is undertaken, thereby allowing further damage to the historic building

**Protecting and maintaining** masonry by ensuring that historic drainage features and systems that divert rainwater from masonry surfaces (such as roof overhangs, gutters, and downspouts) are intact and functioning properly.

Failing to identify and treat the causes of masonry deterioration such as leaking roofs and gutters or rising damp.



THE SECRETARY OF THE INTERIOR'S  
STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES  
WITH  
GUIDELINES FOR PRESERVING, REHABILITATING, RESTORING & RECONSTRUCTING HISTORIC BUILDINGS





U.S. Department of the Interior  
National Park Service  
Cultural Resources, Partnerships & Science  
Washington, D.C.

# **Guidelines on Flood Adaptation for Rehabilitating Historic Buildings**

Jenifer Eggleston  
Jennifer Parker  
Jennifer Wellock

November 2019

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	The Secretary of the Interior's Standards
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	Guidelines for Rehabilitation
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4	The Guidelines on Flood Adaptation for Rehabilitating Historic Buildings
6	Assessing the Risk and Selecting an Adaptation Treatment

## Temporary Protective Measures

Temporary or non-permanent protective installations use materials or systems that can be deployed or activated when flooding is predicted, and removed or stored when the flood waters have receded. Temporary measures are generally the most affordable options and can have a low impact on the historic character of the property because they rarely involve permanent changes to the property. However, temporary measures may not be well suited for areas subject to frequent flooding. Temporary measures require time and people to quickly deploy them, so they are not a good option in locations where flooding may occur without sufficient warning time. Although someone may need to be on site to deploy the system, property owners or tenants themselves should secure the property as best they can and move to a safe location outside the flood zone for the duration of the event.

Temporary measures include sandbags, temporary dams, temporary floodgates, and flood-wrapping systems. Sandbags are the most widely-recognized tool used to protect a property from flood water, but there are also synthetic products that function in a similar fashion. Temporary dams are intended to encircle a building or close gaps in floodwalls. Temporary floodgates are removable barriers installed in windows, doorways, and other openings. Flood wrapping systems cover the most vulnerable portion of an existing structure to create a temporary impervious barrier. Wrapping systems do not lend additional strength or stability to a structure, therefore any building using such a system must be able to withstand the forces of the flood.

No temporary system is failproof. There can be water seepage with these materials and systems, and they should be used in conjunction with pumps and emergency generators. Generators should be elevated above the established flood risk level. If a temporary measure is breached or overtopped, the deployed system should be immediately removed once flood waters have receded to promote drying. With any of these systems, if custom-sized or special components are needed for certain locations (like a floodgate for a specific-width opening), it is important that they be easy to locate and identify to facilitate timely installation when flooding is predicted.

### Technical Limitations:

- Temporary protective measures are generally designed for relatively shallow floods of limited duration.
- Deployment takes time and varies depending on the equipment or system and the labor available to put it in place.
- Equipment requires storage space, and, if stored off site, the logistics of getting the temporary barrier or system to the site must be factored into deployment time.

- During a flood event, temporary measures must not rely on continual on-site monitoring, as evacuation from the flooded area may be required until emergency personnel allow property owners to return.

Recommended	Not Recommended
Selecting a temporary barrier, system, or equipment that will protect the historic building from the predicted type of flooding and that can be deployed using the labor, equipment, and warning time available.	Selecting a system or equipment inadequate to protect the historic building from predicted flooding and/or cannot be deployed quickly.
Evaluating and ensuring the ability of masonry walls and temporary flood barriers or other systems covering masonry openings to withstand the forces of flooding. Reinforcing walls as necessary to withstand such forces.	Reinforcing masonry walls to withstand the forces of flooding in a manner that destroys historic materials and features or diminishes the historic character of the property.
Installing fastening devices or stanchions to attach the temporary barrier or system in concealed or secondary locations of the building, and in a manner that does not damage, alter, or otherwise impact the historic character of the property.	Installing fastening devices or stanchions where they would damage, alter, or otherwise impact the distinctive materials, features, and spaces of the property.
Establishing procedures, responsibilities, and regular training for deploying temporary barriers and other systems.	
Installing pumps to remove water that breaches the temporary barrier or other system. If pumping out water post-flood event, ensuring that the water is pumped far enough from the protected property to avoid seeping back in.	
Investing in a generator as a backup to operate the pumps if there is a power failure during or after a flood. Installing a generator in a floodproof enclosure or above the established flood risk level.	

# Planning and Assessment for Flood Reduction

- Planning and risk assessment should be undertaken before work.
  - Properties should be maintained in good condition, monitored regularly, and appropriately documented as part of any treatment plan for the property.
- Example from this section of a planning consideration:
    - Identify the historic property's flood risks and vulnerabilities and any existing capacity for resilience.

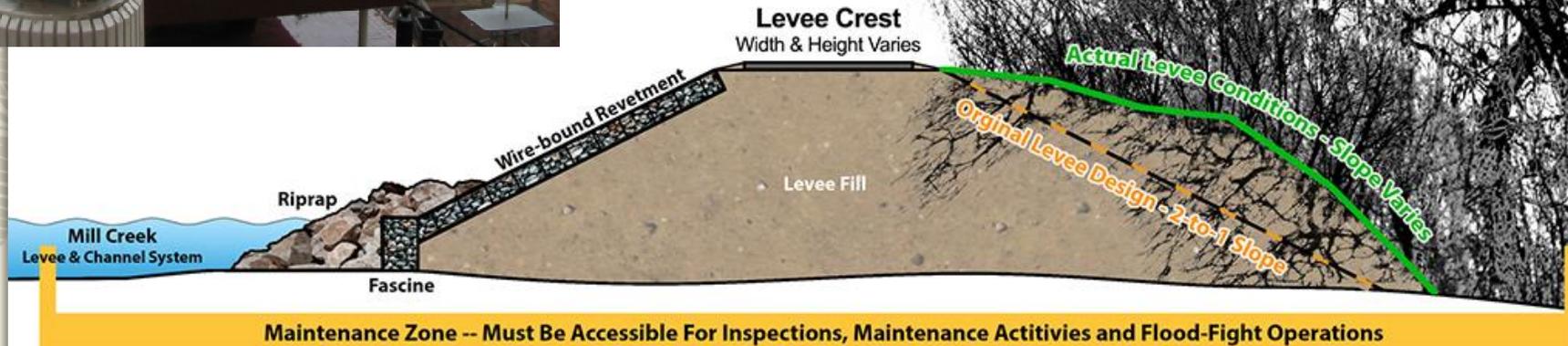
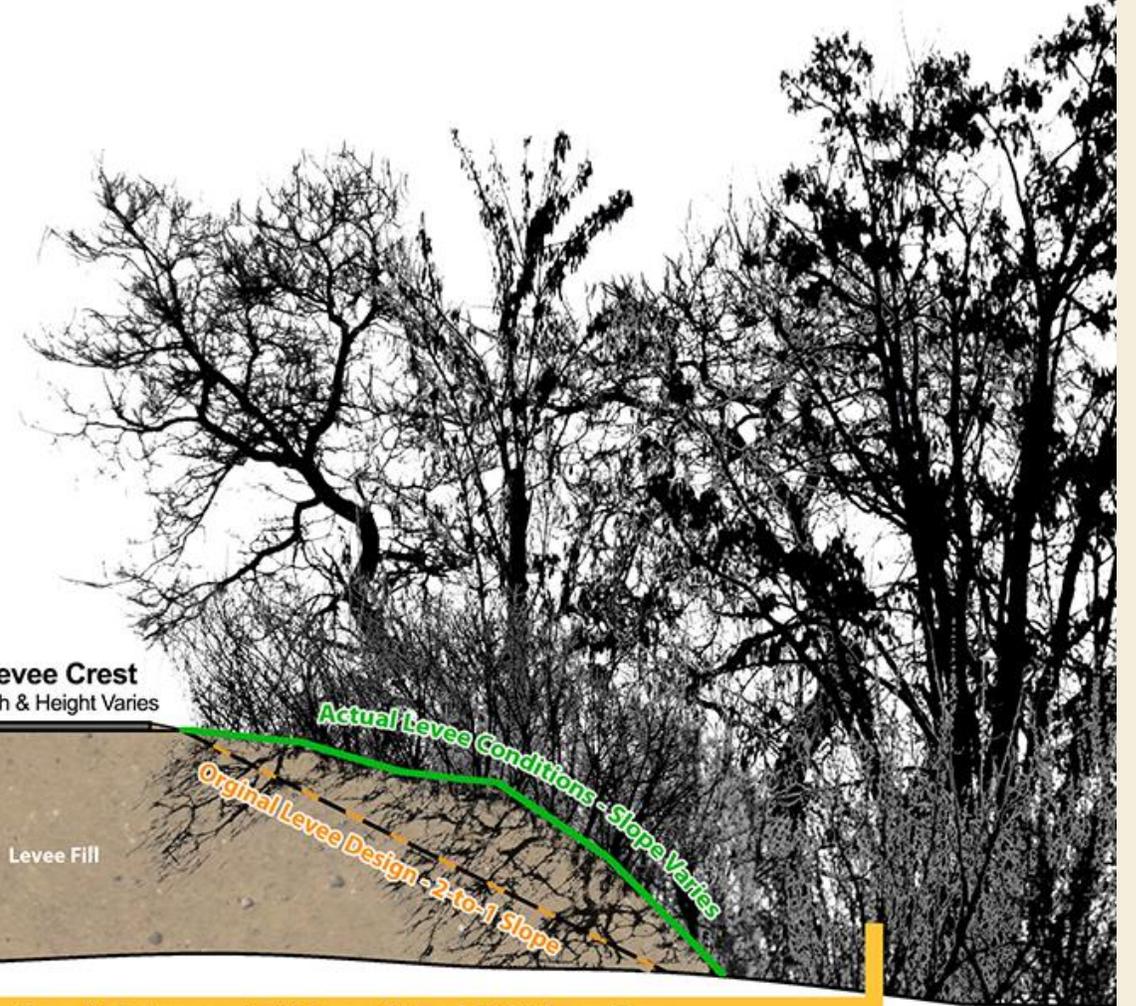
# Temporary Protective Measures



Temporary protective measures are generally designed for relatively shallow floods of limited duration.



# Site and Landscape Adaptations



# Protect Utilities

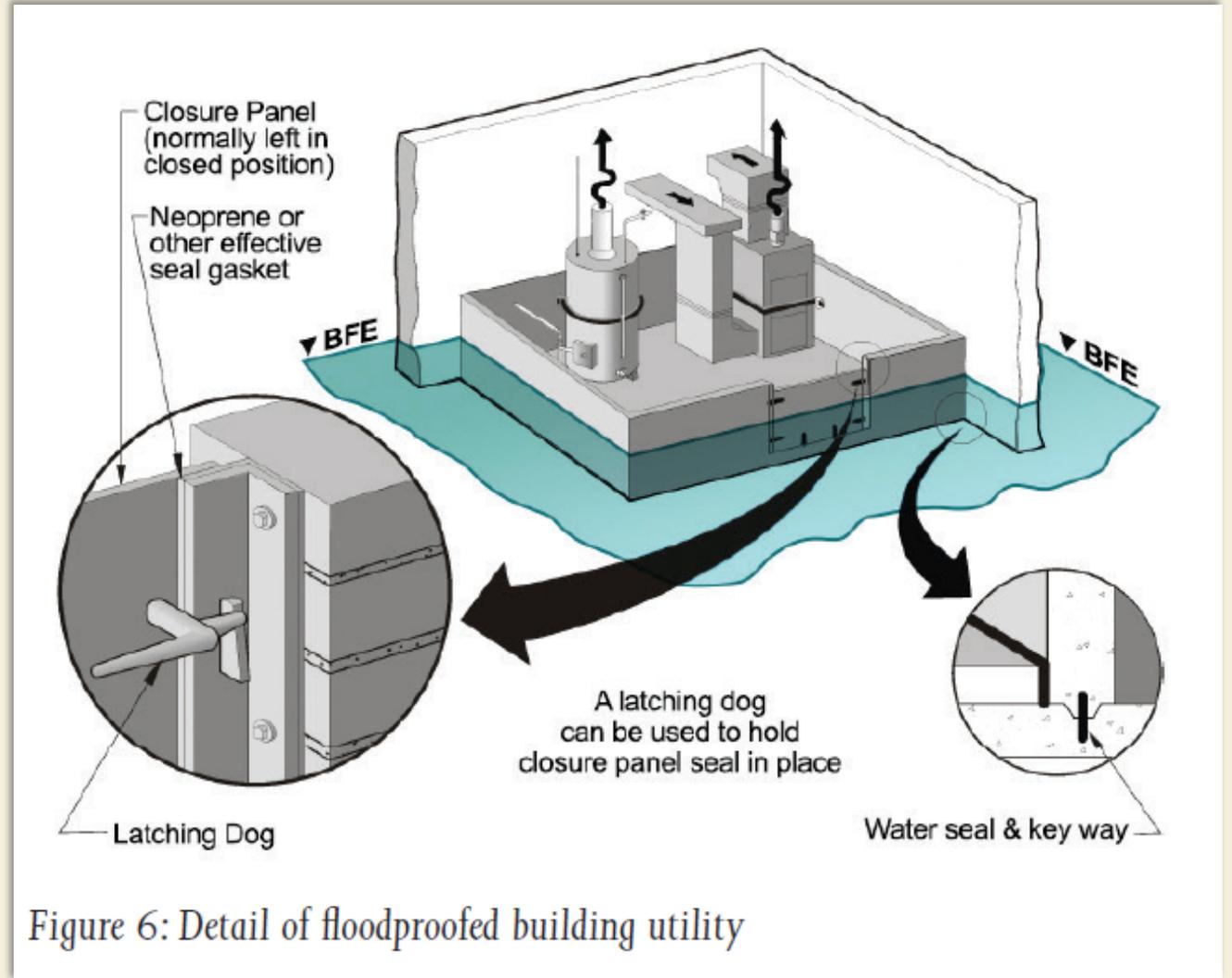


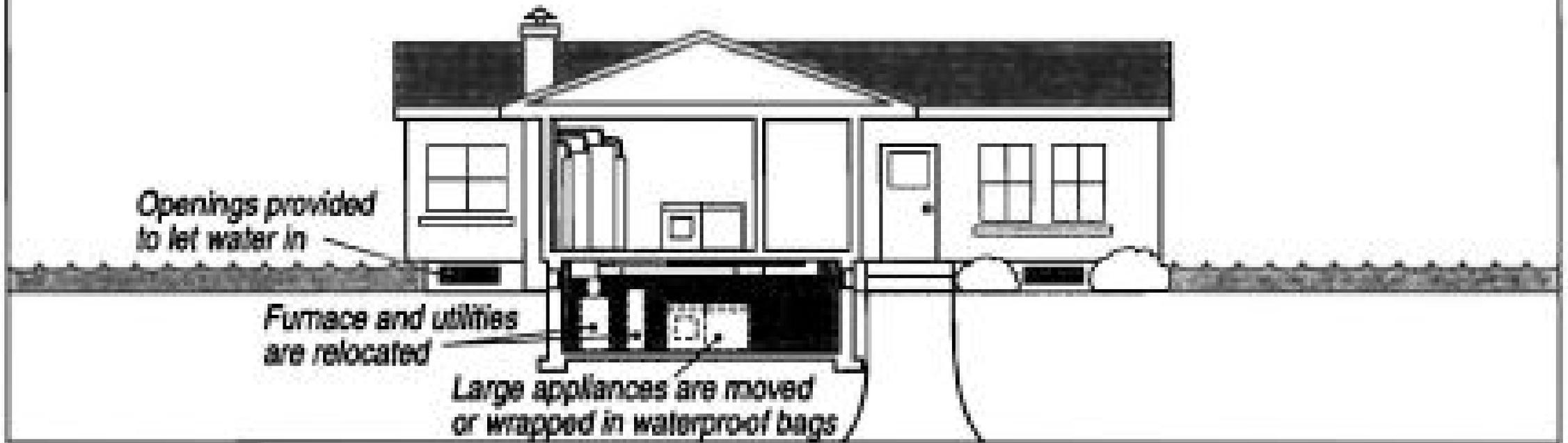
Figure 6: Detail of floodproofed building utility

# Dry Floodproofing



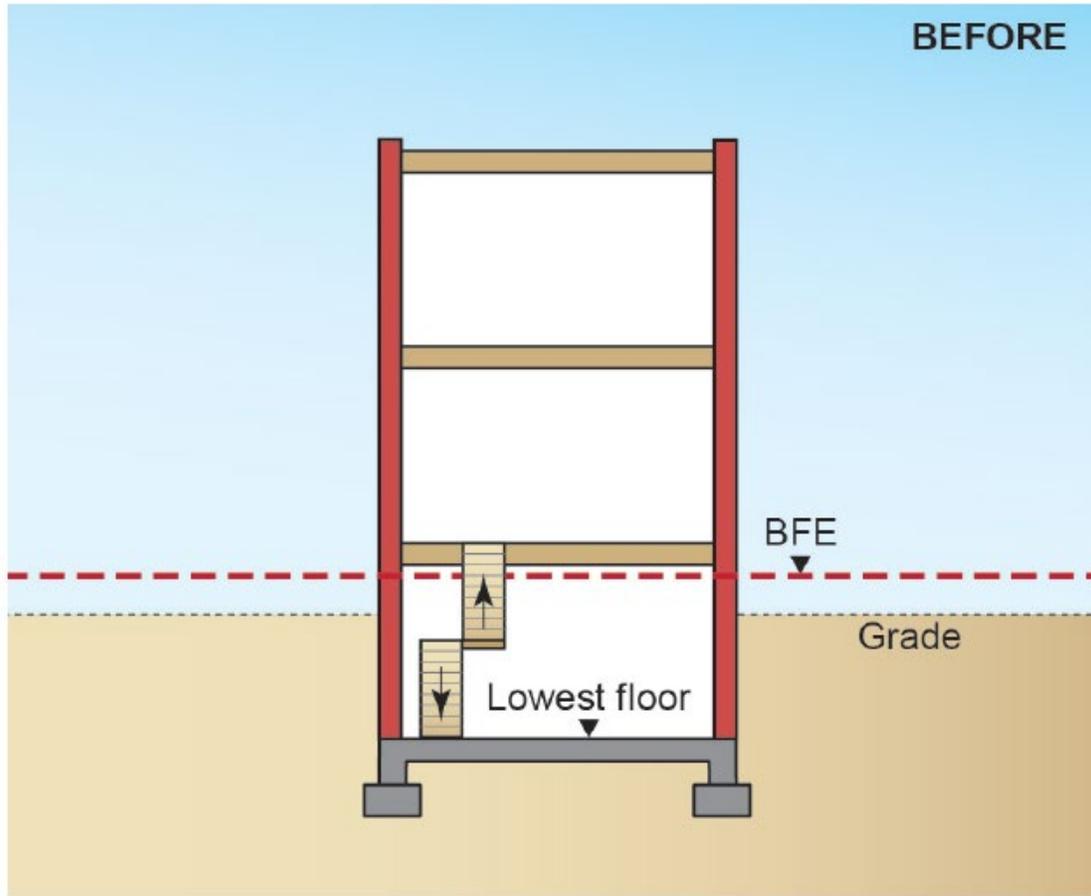
# Wet Floodproofing

## Wet Flood Proofing

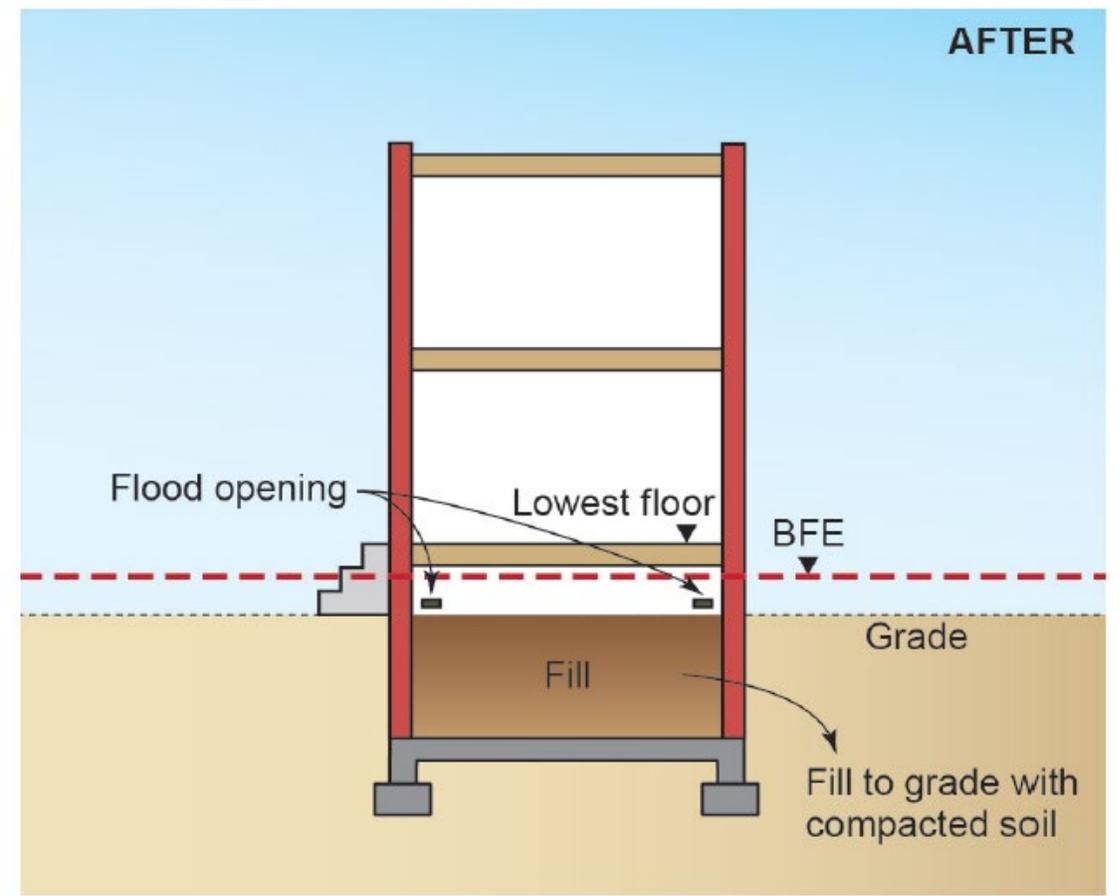


# Fill the Basement

BEFORE



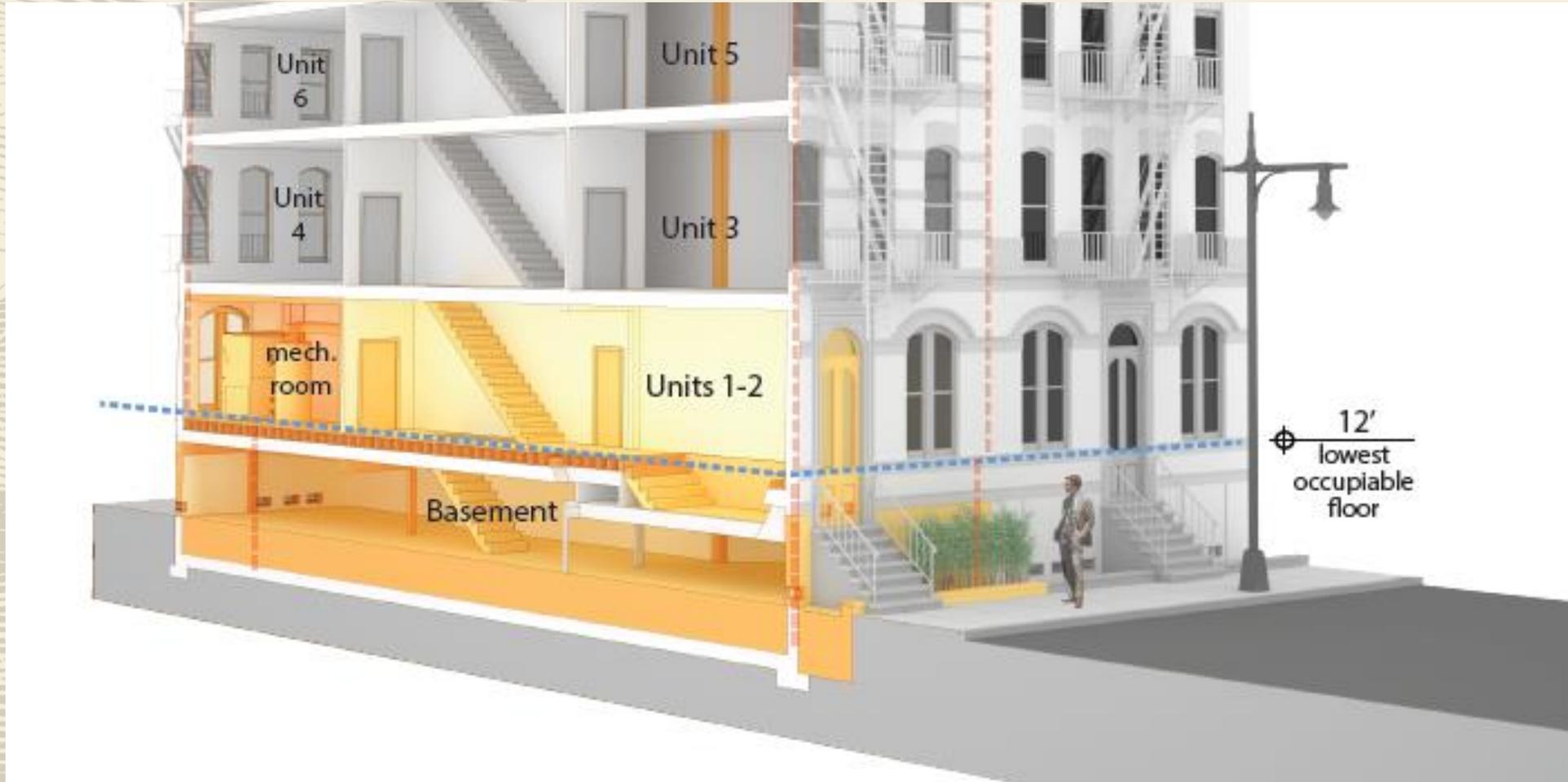
AFTER



# Elevate on a New Foundation



# Elevate the Interior Structure



# Abandon the First Story

- Requires modification of a multi-story building to relocate all living spaces to upper floors above the established flood risk level. The abandoned first story must be altered and adapted into a utilitarian wet or dry floodproofed space

# Move the Historic Building



# Flood Workshops in 2020

- Tacoma, WA – Feb 25 & 26 – hosted by WA SHPO
- Dallas, TX – May 17 – National Main Street Conference
- *Tacoma, WA – between July 22-26 – NAPC FORUM (half-day version only)*
- *Miami, FL – October 2020 – PastForward Conference (NTHP)*

# Thank you

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