



2

Comparing Guidelines

Flood Guidelines	Other Guidelines
• ONLY apply to buildings with risk • Some treatments ONLY meet the Standards in the context of the risk • Organized by flood adaptation	• Apply to ALL buildings • Recommends best practices in any typical circumstances • Organized by material/feature

4

Open your book!

- *Pages 1-14:* Introductions set the stage
- *Page 16:* Planning chapter is for all projects
- *Pages 39-40:* Typical adaptation chapter layout
 - Graphic/photo illustration
 - Narrative description
 - Technical limitations
 - Recommended/Not Recommended (*next page 41*)
- *Pages 121-126:* Other Treatments
- *Pages 127-142:* Case Studies

5

Using the Guidelines (pp. 9 – 11)

Elevated 4 feet



Reduce Flood Risk

Feasible and Affordable

Maintain Historic Character

- Case-by-case determinations
- Evaluation of entire scope of work

6

Assessing Risk and Selecting Treatment (pp. 12 -14)

Direction

FLOOD AREA Frequency

Timing

Intensity

Multiple Futures

60+ Time Horizon

Capacity

7

Vulnerability and Exposure

Exposure

Sensitivity

Potential Impact

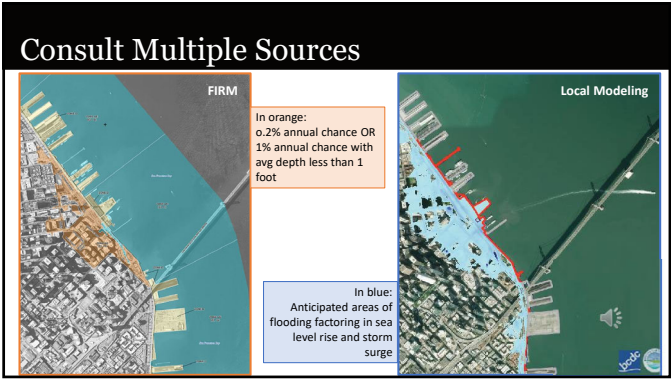
Adaptive Capacity

Vulnerability

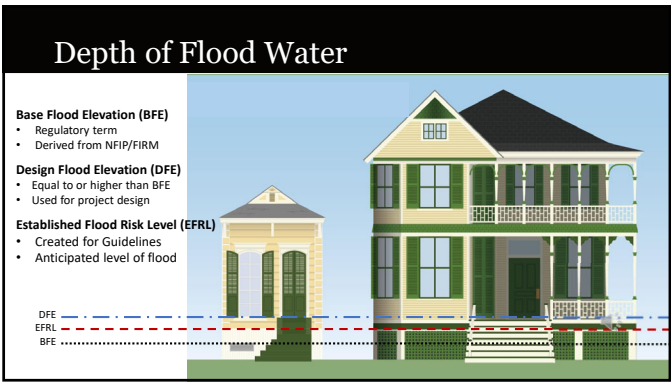
Sources for Exposure Information:

- FEMA Flood Maps (FIRM), if available
- Risk Factor by the First Street Foundation (private)
- Interagency SLR Scenario Tool (NASA Sea Level Change Portal)
- Vermont Flood Ready Atlas

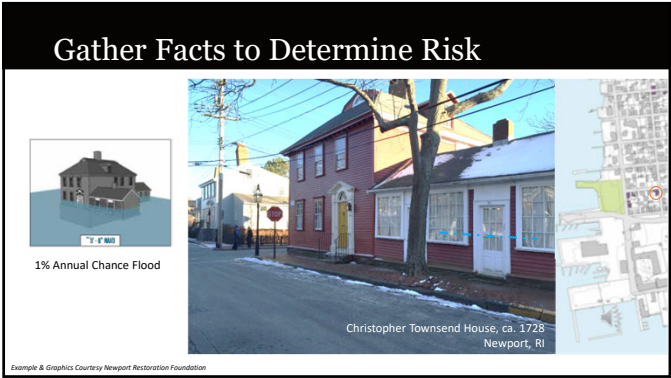
8



9

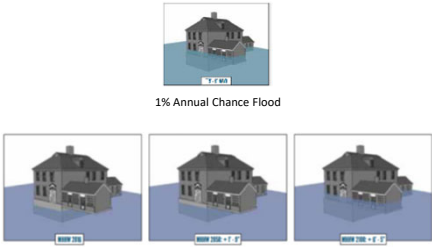


10



11

Compile Information from Sources



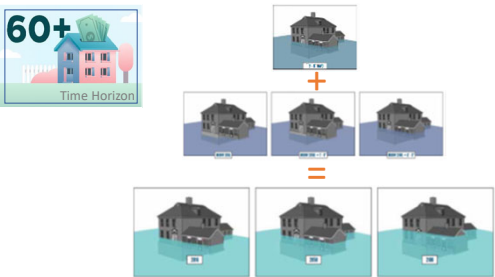
1% Annual Chance Flood

Sea Level Predictions

Example & Graphics Courtesy Newport Restoration Foundation

12

Determine Established Flood Risk Level



60+ Time Horizon

1% Annual Chance Flood

1% Annual Chance Flood

1% Annual Chance Flood

1% Annual Chance Flood

1% Annual Chance Flood

1% Annual Chance Flood

Example & Graphics Courtesy Newport Restoration Foundation

13

Compare Established Flood Risk to Building



EFRL = 6 feet

What does that mean?

Source: Google

14

Compare Established Flood Risk to Building

Elevation Certificates

- Exposure:
 - BFE and FIRM information
 - Protected areas
- Sensitivity:
 - First floor elevation
 - Lowest opening
 - Lowest equipment
 - Lowest adjacent grade

First floor

Low opening

Lowest adjacent grade

15

Alternate Methods

- Statistical predictability modeling
 - i.e., Hampton Roads Methodology
- Low tech measurements
 - Topographical maps
 - Neighboring elevation certificate(s)
- High tech measurements
 - Hi-Res Photos and Photogrammetry
 - LIDAR
 - 3-D Scanning

16

Potential Impacts

Which parts of the building and site are most at risk to damage?

17

Adaptive Capacity

Exposure

Sensitivity

Potential Impact

Adaptive Capacity

Vulnerability

Evaluate:

- Existing capacity for resilience
- Current physical condition
- Use and occupation patterns

18

Document

Document

Document

48167C0437G
Eff. Date: 8/15/2019

48167C0437G
Eff. Date: 8/15/2019

HURRICANE IKE HIGH WATER
SEPTEMBER 2008

19

Why Take the Time to Document?

Facilitate Consultation/
Preparation for BAR, if
applicable

Future Management/Owners

20



21
