Are You The Weakest Link?

Resilient Design 101

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Conference + Trade Show of the Northeast Sustainable Energy Association (NESEA)

NESEA™

WILSON ARCHITECTS

Wilson Architects

- 50-Person Design Firm
- Committed to advancing energy efficiency and reducing the impact of climate change
- Established in 1995
- Design Focus on Higher Education Teaching & Research Environments

Course Description

Codes focus on safe evacuation in an emergency, not on keeping buildings occupiable through a disaster. Buildings are often expendable.

With climate change, displacement due to damage from extreme weather events like Superstorm Sandy is more common. Is building to code minimums really enough?

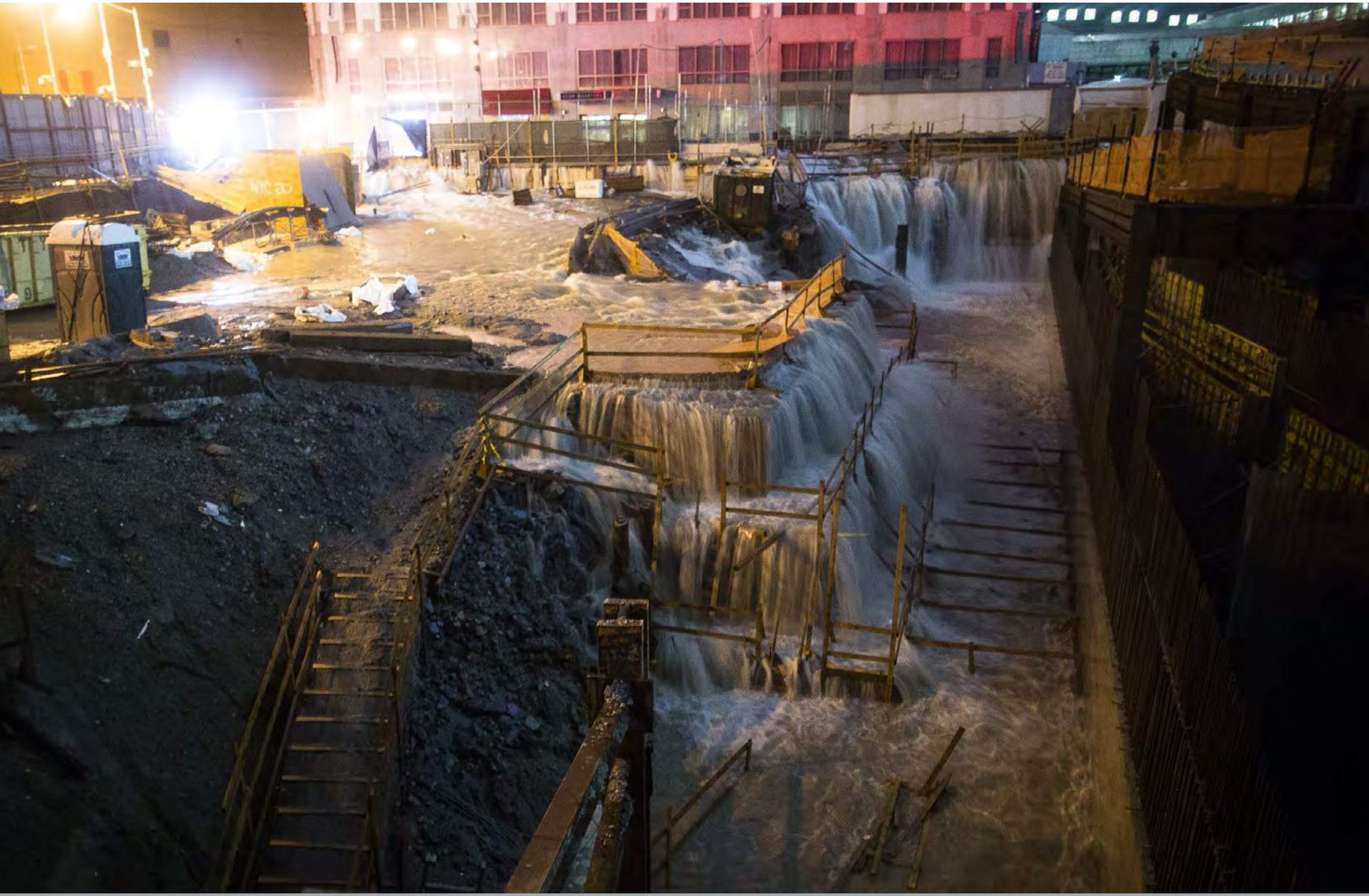
This workshop will take you through the process of planning for Resilient Design, using the LEED pilot credits on Resilient Design IPc98, 99, and 100.

Learning Objectives

At the end of this course, participants will be able to:

- Explain the need for resilient design based on the expected service life and function of a building.
- Evaluate project vulnerability to hazards by region for LEED IPpc98: Assessment and Planning for Resilience.
- Select methods for mitigating hazards for LEED IPpc99: Design for Enhanced Resilience.
- Describe design approaches for LEED IPpc100 Passive Survivability and Functionality during Emergencies.

Why Resilient Design?



Why Resilient Design?

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Embrace the Changes that are taking place?

Nick Anastasia rode his tall bike during the King Tide, Nov. 15, 2016. Lane Turner / Boston Globe Staff

Build a WALL to Protect us?

Inner Harbor

Outer Harbor

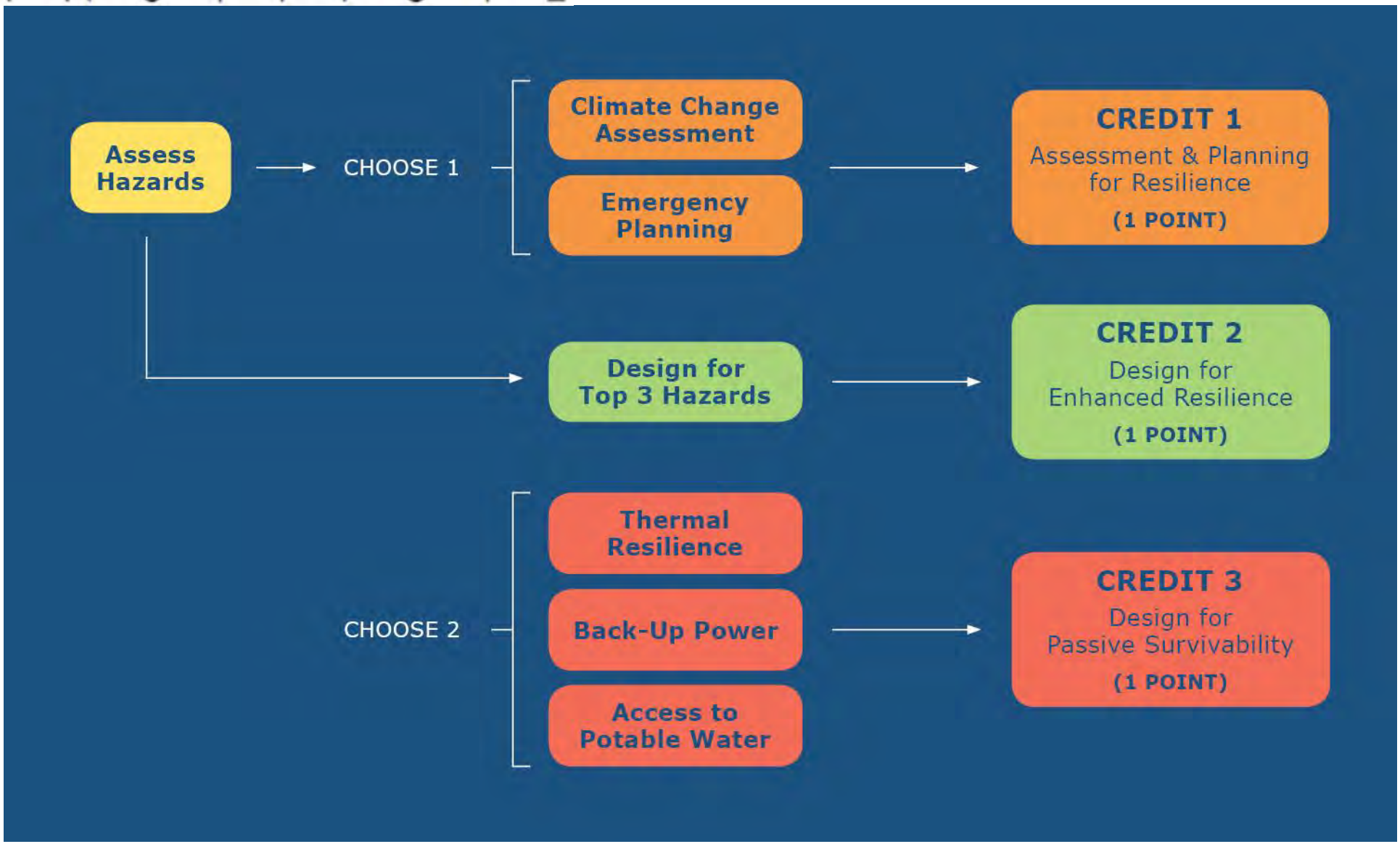
Area with significant landfill vulnerable to flooding

Restricted Tidal Flow

The Sapphire Necklace

LEED Pilot Credits on Resilient Design

RESILIENT DESIGN INSTITUTE



A schematic showing the basic structure of the three pilot credits. Graphic: Jessie Woodcock, ZGF

LEED Pilot Credits on Resilient Design

IPpc98														IPpc99			IPpc100		
Prerequisite								Option 1: Step 1											
Flooding	Hurricanes	Tornado/ Wind	Earthquake	Tsunami	Wildfire	Drought	Landslide	Sea Level Rise	River Flooding	Winter Storms	Temp, Rain, Storm	Option 1: Step 2	Option 2	Hazard 1	Hazard 2	Hazard 3	Thermal Resilience	Back up Power	Potable Water

Sample Projects

University Hall, Boston, MA

MIT.nano, Cambridge, MA

IRYS School of Technology & Trades New Structure, Newport, RI

Sample Projects

University Hall, University of Massachusetts Boston

Columbia Point, Boston, MA

Sample Projects

MIT.nano, Massachusetts Institute of Technology

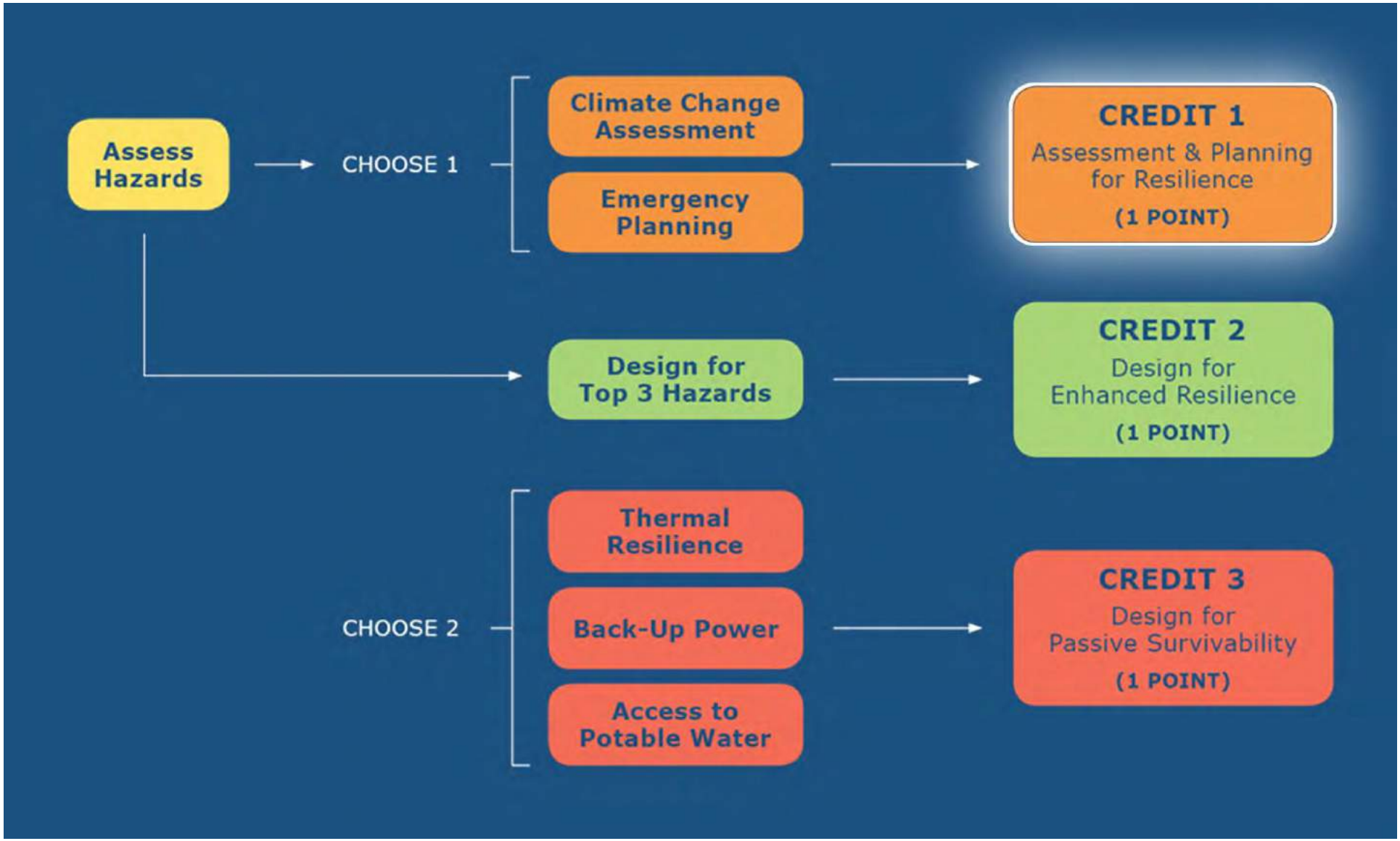
Cambridge, MA

New Structure for Marine Systems & Composites Programs, IYRS

Spring Wharf, Newport, RI

LEED Pilot Credits on Resilient Design

RESILIENT DESIGN
INSTITUTE



A schematic showing the basic structure of the three pilot credits. Graphic: Jessie Woodcock, ZGF

Prerequisite Hazard Assessment

- Flooding
- Hurricane
- Tornado/high wind
- Earthquake
- Tsunami
- Wildfire
- Drought
- Landslide/unstable soils

Option 1: Climate Change

- Seas Level Rise and Storm Surge
- River Flooding Projects
- Winter Storms
- Temperature, Precipitation Changes and Storm Intensity

Option 2: Emergency Planning

- Evaluate readiness
- Continual Assessment