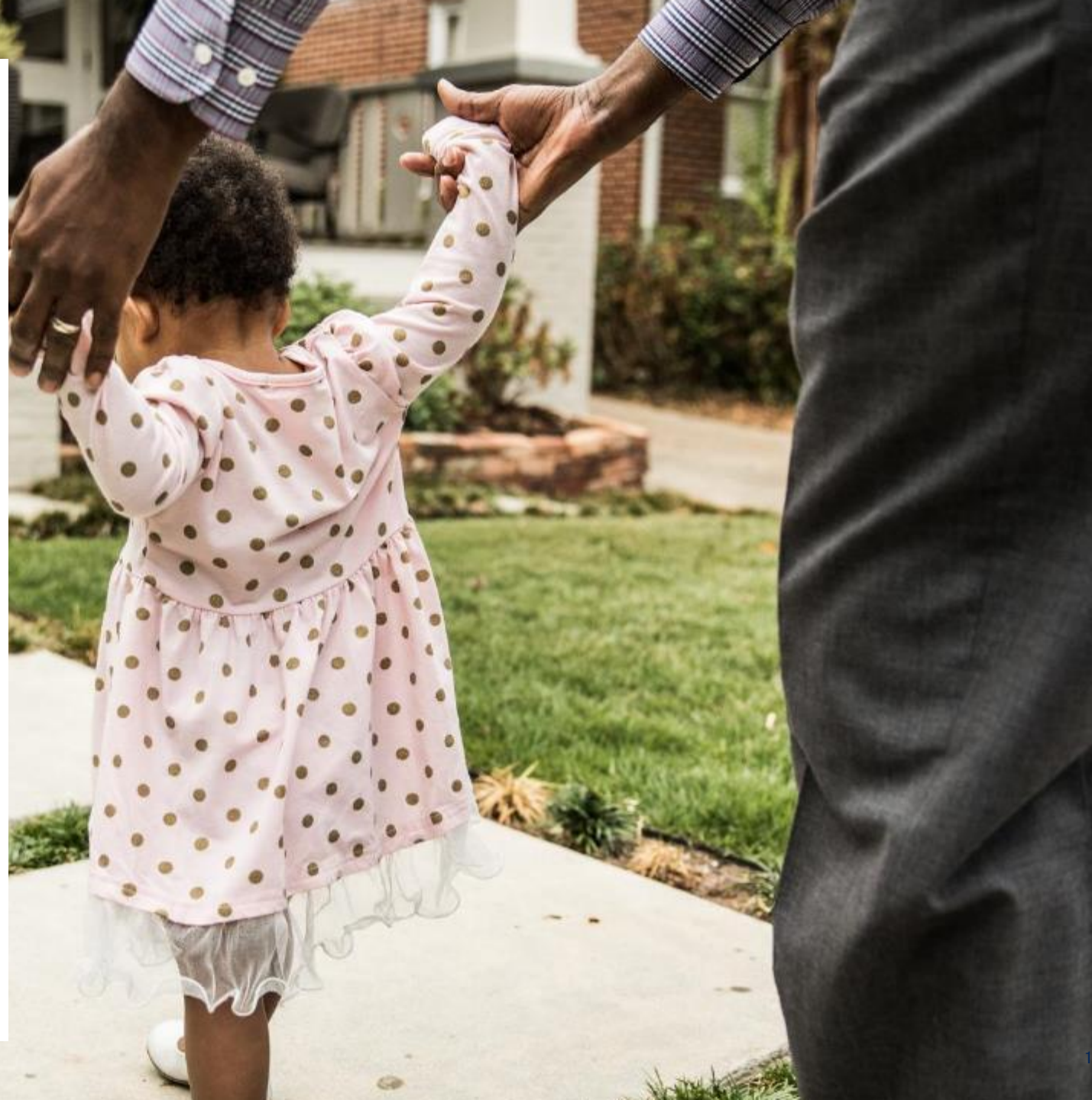


Strategies for Multifamily Building Resilience

June 28, 2023





Building Resilient Futures

The challenges are bigger than any one of us can solve alone.

That's why we're leading the way to protect people and protect their homes. And why we're working with all our partners to create solutions that leave no one behind.

We believe resilience isn't just about being able to bounce back or rebuild after a disaster – it's about drawing from the inherent strength in communities and helping everyone prepare for and move forward in the face of our new climate future. And when we build more resilient communities, we build a better future for everyone.

Key Challenges

- Due to its age, physical conditions, and maintenance needs, most of the country's affordable housing stock cannot withstand our changing climate.
- According to IPCC consensus, we must decarbonize by 2050 to avoid irreversible loss of ecosystems and crisis for vulnerable people.
- The pace, and expense, of disasters has increased dramatically in the U.S. and across the globe.
- Post-disaster government assistance is well-intentioned, but slow and inequitable; resources lack coordination.
- As temperatures and sea levels rise, so do the number of low-income households that are at risk.
- BIPOC and low-income communities are at higher risk of climate-related health impacts including asthma, cardiovascular disease, and increased rates of mortality.



Resources & Innovations



Identify your hazard exposure

Assess your risks

Determine your resilience strategies

Implement resilience strategies

[Portfolio Protect](#)

[Building Protect](#)

[Multifamily Strategies for Building Resilience](#)^{CF}

[Business Continuity](#)

[Keep Safe Florida](#)

[Keep Safe: A Guide for Resilient Housing Design in Island Communities](#)

[Funding Resources Guide](#)

[Keep Safe Florida](#)

[2020 Enterprise Green Communities Criteria](#)^{CF}

[Business Continuity](#)

[Multifamily Strategies for Building Resilience](#)^{CF}

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Strategies for Multifamily Building Resilience

CLIMATE SAFE HOUSING

Strategies for Multifamily Building Resilience

Protection

Strategies to reduce a building's vulnerability to extreme weather

- 1 [Wet Floodproofing](#)
- 2 [Dry Floodproofing](#)
- 3 [Site Perimeter Floodproofing](#)
- 4 [Resilient Elevators](#)
- 5 [Backwater Valves](#)
- 6 [Sump Pumps](#)



Adaptation

Strategies that improve a facility's ability to adapt to changing climate conditions

- 7 [Envelope Efficiency](#)
- 8 [Elevated Equipment](#)
- 9 [Elevated Living Space](#)
- 10 [Surface Stormwater Management](#)
- 11 [Window Shading](#)
- 12 [Distributed Heating and Cooling](#)



Backup

Strategies that provide critical needs for when a facility loses power or other services

- 13 [Maintaining Backup Power to Critical Systems](#)
- 14 [Emergency Lighting](#)
- 15 [Access to Potable Water](#)



Community

Strategies that encourage behavior which enhances resilience

- 16 [Building Community Ties](#)
- 17 [Creating Community Resilience Spaces](#)
- 18 [Developing an Emergency Management Manual](#)
- 19 [Organizing for Community Resilience](#)



Portfolio Protect

Are your affordable housing properties at damage risk from natural hazards or climate events?

Find out with Enterprise Portfolio Protect

3500 Pan American Dr, Miami, FL 33133, USA

Or enter multiple addresses by clicking here >

[Download full resources guide](#)

PDF

RETRY ALL FAILED

REMOVE ALL

Locations

<input type="checkbox"/>	Action	Address	Risk Score	# High Risks	Range for US
<input type="checkbox"/>	HIDE RESULTS	3500 Pan American Dr, Miami, FL 33133, USA	12	1	0 - 30

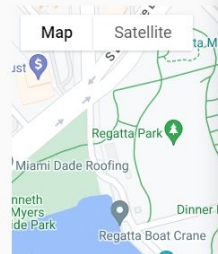
3500 Pan American Dr, Miami, FL 33133, USA

Total Risk

Total Risk Score: 12 / 30

We have calculated your risk score by multiplying your Social Vulnerability risk level by all your hazards.

- Risk score range for USA is 0 - 30
- Individual hazard risk ranges are 0 - 5



Social Vulnerability Index

Social Vulnerability (SVI) Risk Level: N/A >

Hazards

Flooding Risk Level: 4 / 5 >

Sea Level Rise Risk Level: 1 / 5 >

Hurricanes Risk Level: 2 / 5 >

Wildfire Risk Level: 0 / 5 >

Heat Wave Risk Level: 0 / 5 >

Cold Wave Risk Level: 1 / 5 >

Strong Winds Risk Level: 1 / 5 >

Tornado Risk Level: 2 / 5 >

Landslide Risk Level: N/A >

Earthquake Risk Level: 1 / 5 >

Tsunami Risk Level: N/A >

VIEW RESULTS

61 S St NW, Washington, DC 20001, USA

2.5

Business Continuity

Business Continuity Toolkit for Affordable Housing Organizations

ARE YOU READY TO RESPOND?

Disaster can strike at any time, and a poorly managed response can put property and lives at risk.

This Toolkit equips **multifamily affordable building owners & managers** with a plan to address crisis.



Watch the video or scroll down to learn more.



→ Do you know the risks of climate on your housing portfolio?

→ Why is having a Business Continuity Plan essential?

Create Your Business Continuity Plan

1

Identify & Orient Your Team Leader

2

Build Your Team

3

Practice Your Response

YOUR TEAM Orient Your Team Leader

Job Description

The Team Leader is given the title of Emergency Preparedness Coordinator (EPC). They develop the Disaster Staffing Plan, prepare staff for their disaster response roles and oversee ongoing maintenance.

The Emergency Preparedness Coordinator (EPC) has an important job to do!

Responsibilities include:

- » Familiarizing oneself with the material
- » Working with the organization's lead
- » Getting staff involved and supporting
- » Coordinating staff trainings through it
- » Providing regular updates on progress
- » Overseeing regular updates to documents
- » Orienting new staff as they are assigned
- » Identifying new training and resources

TO GET READY, WATCH THIS VIDEO!

CREATE YOUR PLAN

- 1 Orient Your Team Leader
Why should you have a Business Continuity Plan?
Intro to the Business Continuity Toolkit
- 2 Build Your Team
- 3 Practice Your Response

SUPPORTING TOOLS & RESOURCES

This Staffing Chart shows the recommended Disaster Response Roles to be filled by staff in your organization. The Staffing Chart is based on a chain of command led by the Incident Commander.

DOWNLOAD PRINT



Resources & Innovations

READY TO RESPOND

Strategies for Multifamily Building Resilience



Disaster Preparedness
for Affordable
Housing Organizations



Protection 14

Strategies to reduce a building's vulnerability to extreme weather.

1	Wet Floodproofing	15
2	Dry Floodproofing	21
3	Site Perimeter Floodproofing	28
4	Resilient Elevators	34
5	Backwater Valves	40
6	Sump Pumps	46

Adaptation 51

Strategies that improve a facility's ability to adapt to changing climate conditions.

7	Envelope Efficiency	52
8	Elevated Equipment	59
9	Elevated Living Space	65
10	Surface Stormwater Management	70
11	Window Shading	76
12	Distributed Heating and Cooling	82

Backup 87

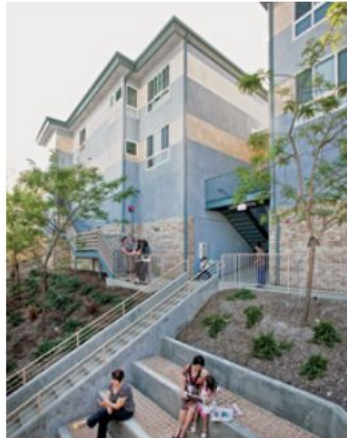
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Resources & Innovations

READY TO RESPOND

Strategies for Multifamily Building Resilience



Disaster Preparedness
for Affordable
Housing Organizations



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Strategies that encourage behavior which enhances resilience.

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Strategies to reduce a building's vulnerability to extreme weather.

1	Wet Floodproofing	15
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Background

During Superstorm Sandy, Hoboken, NJ suffered heavy damage to its buildings and infrastructure, including this six unit multifamily building, 132 Jackson St., located in the AE flood zone. After the storm, the property faced escalating insurance costs.



Strategy

To mitigate future risk and reduce insurance premiums, the owner chose a wet floodproofing strategy, which added nine Smart Vents on the first floor and used 9 inches of gravel and concrete fill to raise the floor to ground level. To minimize heat loss during cold weather, the owner chose insulated Smart Vents.



Images: www.yourfloodrisk.com

Strategies to reduce a building's vulnerability to extreme weather.

Cost

Total cost of the renovation, including installation of Smart Vents and the first floor fill, was \$25,000. The one-panel Smart Vents cost \$200 to \$250 each. **the retrofit, the building experienced an 83 percent reduction in the cost of its flood insurance policy.** Originally, the owner paid \$12,000 for \$300,000 worth of coverage; after the retrofit, their premium fell to \$2,000 and coverage rose to \$820,000. The owner experienced a return on investment in just two and a half years.

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LOCATION

132 Jackson St., Hoboken, NJ



SCALE

6 Units



COST

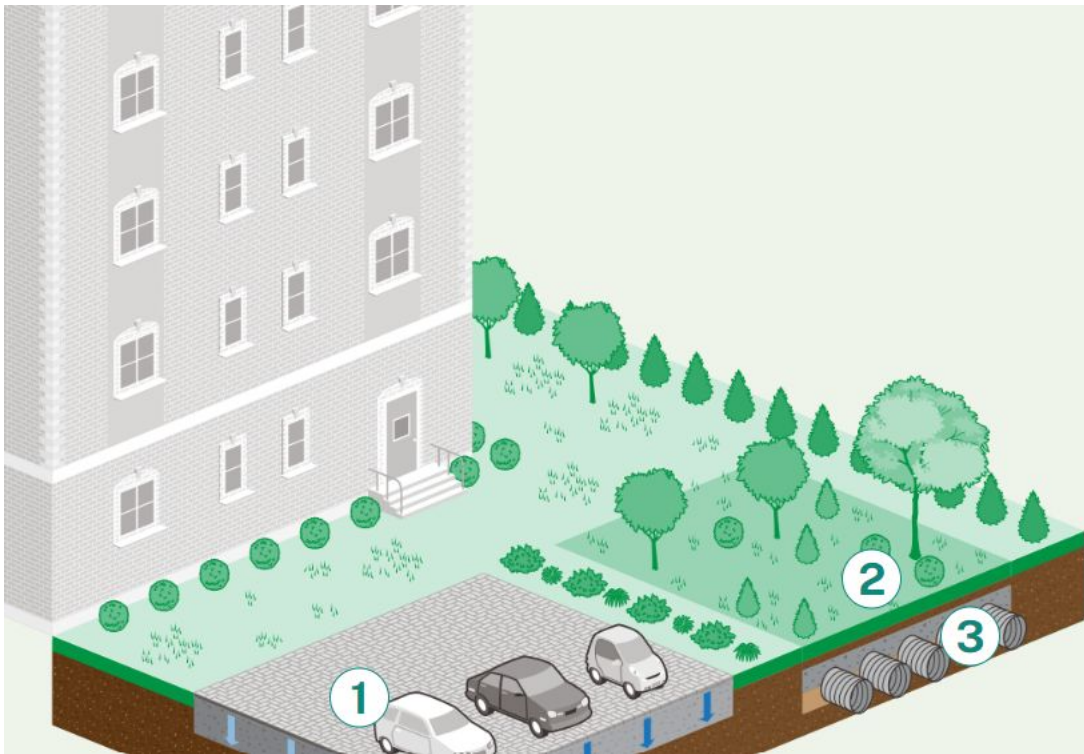
\$25,000

Strategies that improve a facility's ability to adapt to changing climate conditions.

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- 9 Elevated Living Space _____ 65
- 10 Surface Stormwater Management _____ 70
- 11 Window Shading _____ 76
- 12 Distributed Heating and Cooling _____ 82

10 Surface Stormwater Management

Stormwater is a major cause of urban flooding, especially in cities with combined sewer and stormwater systems. Many combined municipal water treatment systems are working at maximum capacity and can't handle additional volume during a large storm. Infiltrating water into the ground on-site reduces the need for large infrastructure projects and can ease flooding, speed recovery after a storm and reduce sewer backups.



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