Enterprise: Who We Are

Create opportunity for low- and moderate-income people through fit, affordable housing in diverse, thriving communities.

11 offices
570 employees
Columbia, MD national headquarters
Changing Climate = Hazard Impacts
Superstorms and Hurricanes

Multifamily Partnerships
Multifamily Housing

- Social Services
- Residential Units
- Critical Systems
- Commercial Facility
- Community Room
Lessons from the Field

NJ

NY

55 Sites
Guiding Principles

- Resilience is a smart investment
- Resilience should be a part of the capital improvement planning process
- Use lessons learned from extreme weather events to rebuild smarter
- Connected communities are more resilient
Making an Investment in Resilience

Operations and Staffing

Utility Savings

Insurance and Risk Reduction
Decision Making Process

1. Identify your hazard exposure
   - Understand your previous experience with climate and emergency hazards, the location and climate zone of your site and your community, and your future anticipated risk. See the Hazard and Risk matrix on page X to identify your hazard exposure.

2. Assess your risks
   - Assess potential threats, and anticipate their impact on infrastructure and residents to determine where to focus your attention. See the Hazard and Risk matrix on page X to identify your hazard exposure.

3. Determine your resilience strategies
   - Once you understand the hazards and risks, you can assess which resilience strategies make sense for your building. The chart on page X will guide you.
### Climate Hazards Matrix

#### Identify your Hazard and Risk Exposure

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Determine your Hazard Exposure</th>
</tr>
</thead>
</table>
| **Flooding (River and Coastal)**                      | - Locate your Flood Zone and Base Flood Elevation on the FEMA flood map site:  \[https://msic.fema.gov/portal/search\]  
- Hire a surveyor to provide you with an Elevation Certificate and your flood zone determination.  
- In urban areas connected to a combined sewer stormwater system, many communities are at risk for flooding, even if not located within the Flood Zone.  |
| **Extreme Temperatures and Winter Storms/Blizzards**   | - Power grids and HVAC systems become overtaxed and at risk of failure.  
- Buildings with little natural ventilation and poor envelope performance are at risk during heat waves from overheating.  
- The Urban Heat Island Effect (UHIE) can make heat waves worse.  
- FEMA and The National Oceanic and Atmosphere Administration (NOAA) provide tools to assess risks of long-range changes in weather and climate.  
- Third-party subscription services provide severe weather alerts by Email or SMS. |
| **Severe High Wind Events**                            | - Determine your wind speed zone in accordance with FEMA guidelines.  
- ASCE 7 is the standard for building performance in high winds. Check if your local building codes require ASCE 7 compliance. |
| **Fire**                                               | - The following buildings are at a higher risk for fire  
- Buildings that allow smoking in units.  
- Residents with special needs who may be at risk of accidentally starting a fire or being unable to put one out.  
- Buildings that consume highly flammable fuels.  |
| **Explosion**                                          | - Work with your utility company to ensure that your fuel lines are secure and maintained.  
- Check often for illegal fuel diversion. |

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*Note: The Climate Hazards Matrix is a comprehensive guide to identifying and assessing various natural hazards and their potential risks. It provides detailed information and recommendations for mitigating these risks. The matrix includes specific actions and resources for addressing each hazard, ensuring a comprehensive approach to hazard management.*
## Assess your Risks

<table>
<thead>
<tr>
<th>Risks to Community</th>
<th>Risks to Residents</th>
<th>Risks to Buildings</th>
<th>Risks to Business Continuity</th>
</tr>
</thead>
</table>
| » Destruction of public infrastructure  
» Damage to property  
» Economic stress  
» Evacuation/Migration  
» Disruption of transportation  
» Loss of faith in public institutions  
» Blackouts  
» Water supply contamination  
» Security risk  
» Regulatory sanctions or fines  
» Migration out of community | » Injury or loss of life  
» Psychological trauma  
» Loss of property  
» Economic hardship  
» Exposure to pathogens and toxins | Damage to:  
» Envelope  
» Building systems  
» Frame  
» Communications infrastructure  
» Roof  
» Foundation | » Cost of repairs  
» Displacement of residents  
» Rising insurance rates  
» Reduction of property value  
» Lost rent during repairs  
» Risk of regulatory fines |
Determine your Resilience Strategies

### Resilience Strategies

**Decision Matrix**

<table>
<thead>
<tr>
<th>Protection</th>
<th>Low to Mid-Rise walk-up’s</th>
<th>Small-Rise contemporary</th>
<th>Mid-rise contemporary</th>
<th>High-Rise contemporary</th>
<th>Estimated Cost</th>
<th>Related Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Roofproofing</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>6, 8, 9, 10</td>
</tr>
<tr>
<td>Dry Roofproofing</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>3, 5, 6, 14</td>
</tr>
<tr>
<td>Site Perimeter Roofproofing</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>2, 6, 10</td>
</tr>
<tr>
<td>Resilient Elevators</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>2, 3, 6, 8, 13, 18</td>
</tr>
<tr>
<td>Backwater Valves</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$2-$6, 10</td>
<td></td>
</tr>
<tr>
<td>Sump Pumps</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$1, 2, 5, 8, 10, 13</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Low to Mid-Rise walk-up’s</th>
<th>Small-Rise contemporary</th>
<th>Mid-rise contemporary</th>
<th>High-Rise contemporary</th>
<th>Estimated Cost</th>
<th>Related Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Envelope Efficiency</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>11, 12</td>
</tr>
<tr>
<td>Elevated Equipment</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>1, 7, 9, 12</td>
</tr>
<tr>
<td>Elevated Living</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>1, 2, 8</td>
</tr>
<tr>
<td>Surface Stormwater</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>2, 2, 5</td>
</tr>
<tr>
<td>Window Shading</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>7</td>
</tr>
<tr>
<td>Distributed Heating</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>7, 8, 11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Backup</th>
<th>Low to Mid-Rise walk-up’s</th>
<th>Small-Rise contemporary</th>
<th>Mid-rise contemporary</th>
<th>High-Rise contemporary</th>
<th>Estimated Cost</th>
<th>Related Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintaining Backup</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$554</td>
<td>4, 6, 8, 15, 18</td>
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<tr>
<td>Emergency Lighting</td>
<td>●</td>
<td>●</td>
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<td>●</td>
<td>$2-$5</td>
<td>12</td>
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<tr>
<td>Access to Potable Water</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$2-$5</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Community</th>
<th>Low to Mid-Rise walk-up’s</th>
<th>Small-Rise contemporary</th>
<th>Mid-rise contemporary</th>
<th>High-Rise contemporary</th>
<th>Estimated Cost</th>
<th>Related Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Community</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>17, 10, 19</td>
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<tr>
<td>Creating Community</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>13, 15, 18, 19, 10</td>
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<tr>
<td>Emergency Management Manual</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>16, 17, 19</td>
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<tr>
<td>Organization for Community</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>$5-$55</td>
<td>16, 17, 19</td>
</tr>
</tbody>
</table>

**Legend**

- **Units:**
  - 8-10
  - 4-9
  - 10-250
  - 55-695

- **Floors:**
  - 3-6
  - 2-3
  - 6-12
  - 12-40

- **Year Built:**
  - 1920
  - 2030
  - 2040

- **Building Construction:**
  - Masonry structural walls with wood or concrete columns and beam, brick, or stone, and steel or concrete walls.
  - Masonry structural walls with wood or concrete columns and beam, brick or stone masonry, and steel or concrete walls.
  - Masonry structural walls with wood, steel, or stone columns and beam, brick or concrete masonry, and steel or concrete walls.

- **Elevator:**
  - Y/ N

**Applicability**

- Manually applicable
- Primarily applicable
- Applicable
Individual Strategy Components

- Description and Function
- Strategy into Action
- Operations and Maintenance
- Estimated Cost
- Additional Resources
Adaptation

Strategies that improve a facility’s ability to adapt with changing climate conditions
Community
Strategies that encourage changes in behavior to enhance resilience

Creating Community Resilience Spaces

Community spaces should offer a safe and secure environment for residents, and serve as a central location for services during emergencies.

- Safety
- Security
- Access to resources
- Promotes connections among residents

Example: Community Center

- Provides a meeting place for residents
- Offers emergency shelter
- Community events and activities

Diagram:

1. Safety
2. Security
3. Access to resources
4. Promotes connections among residents

Cost:

- Building materials
- Labor
- Maintenance

Notes:

- Regular maintenance is crucial
- Community input for design
- Sustainable practices
Tools for Resilience Landing Page

Ready to Respond

Our Ready to Respond Tools for Resilience were developed to help affordable housing organizations make their buildings resilient, prepare their staff to handle emergencies and ensure their residents remain safe.

These tools will help you:
- Communicate and coordinate with residents and external stakeholders during a variety of emergencies
- Ensure housing infrastructure can sustain shocks from a variety of emergency events
- Maintain business continuity during an emergency event

www.enterprisecommunity.com/readytorespond
An Overview of the Disaster Staffing Toolkit
Funders
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Questions?