State of Rhode Island: Risk Reduction for Small Business Resiliency

Kelly Knee (RPS) and David Murphy (MMI)
2018 CAFM Annual Meeting

Funding for this project has been provided by Office of Housing and Community Development - Rhode Island and the U.S. Department of Housing and Urban Development.
90% of small businesses fail within 2 years of being impacted by a disaster.

In Rhode Island:
- 99% of businesses are small.
- Small businesses employ 53% of the private workforce.

Flood Preparedness:
The average flood claim from 2007 to 2011.
- Residential: $30,000
- Commercial: $75,000

Source: National Flood Insurance Program

www.disastersafety.org/flood
Intended Outcomes:

- Project will identify relevant, actionable risk reduction measures and create tailored risk prevention guides for small businesses.
- RI small businesses will better understand how they can prepare for and minimize potential future losses from extreme weather events.
- Business owners will become more engaged in the statewide climate adaptation strategy.
- Municipal decision makers will better understand how the local business community can become more resilient to natural disasters.
- Project will identify recommendations for state and local agencies to support small business resilience.
Project Team

- RI Division of Statewide Planning
- Steering Committee
- RPS
- Milone & MacBroom
- Coastal Resources Center, URI
- Climate Action Business Association
- RI Small Business Development Center
- Spaulding Environmental Associates
Role of the Steering Committee

- **Technical** - Provide advice/feedback and get buy-in on proposed approaches and interim products
- **Pilot Areas** – selection input
- **Outreach** - strategy development for targeting the business community
- **Networks** - Advice/access to stakeholder engagement for interviews, steering committee members
Project Tasks

- Scenario Selection
- Exposure Analysis
- Vulnerability Assessment
- Risk Reduction Options
- Business Typology
- Option Tagging
- Business Risk Profiling
- Rec. Report
- Risk Reduction Guides
# Scenario Selection

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Coastal Flooding</th>
<th>Inland Flooding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>25-Year Water Level</td>
<td>100-Year Flood</td>
</tr>
<tr>
<td>Severe</td>
<td>100-Year Water Level + 2 Feet of Sea Level Rise</td>
<td>100-Year Flood + 3 Feet of Freeboard</td>
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</tbody>
</table>
Exposure Analysis

Methods

• Started with the Secretary of State Business Database
• Identified business physical locations from E911 data
• Assessed impacted businesses for each scenario
  – Is the business located within the impacted area?
• Summarized results:
  – Percent of businesses impacted by municipality
  – Identified locations of clusters of impacted businesses
  – Density of impacted businesses
• Looked at inland and coastal, moderate and severe flooding scenarios separately and combined
• Compiled maps and tables to present results
Exposure Analysis
Locations of Businesses Impacted by Scenario

Inland Businesses Impacted
- Businesses Impacted by 100-Year FEMA Floodplain Water Level
- Businesses Impacted by 100-Year FEMA Floodplain Water Level + 3 Ft. Freeboard
- Unaffected Businesses

Coastal Businesses Impacted
- Businesses Impacted by 25-Year Water Levels (0 Ft. SLUR)
- Businesses Impacted by 100-Year Water Levels + 2 Ft. SLUR
- Unaffected Businesses
Exposure Analysis
Moderate Scenario – Percent of Businesses Impacted
Exposure Analysis
Severe Scenario – Percent of Businesses Impacted
Exposure Analysis
Moderate Scenario – Number of Businesses Impacted

Statewide Moderate Scenario

Number of Businesses
- 1
- 2 - 25
- 26 - 50
- 51 - 75
- > 75

Municipalities
Exposure Analysis
Severe Scenario – Number of Businesses Impacted

Statewide Severe Scenario

Number of Businesses
- 1
- 2 - 25
- 26 - 50
- 51 - 75
- > 75
Pilot Area Selection Requirements:

- Most impacted areas
- Must be a community tied to a disaster (i.e. Sandy, Irene, Nemo)
- Other considerations?
  - A community “champion”
  - Existing community activities
  - Support of local business community
  - Existing demand
  - Where businesses will be receptive
  - Data availability (small business)
Pilot Area Recommendations

- **Westerly / South Kingstown**
  - High impacts from storms; received federal aid
  - Coastal
  - Willing Chamber
- **Smithfield**
  - Diverse, inland area
  - High inland flooding impacts
- **Newport**
  - High impacts, East Bay region
  - Large economic impact for state
- **Warren**
  - High impacts
  - Poor community
- **Warwick**
  - Positive community involvement
  - Coastal AND inland
- **Providence**
  - Urban
  - Willing Chamber
  - Possible focus on Olneyville area
Selected Pilot Areas

- **Westerly to South Kingstown**
  - High impacts from storms
  - Coastal
  - Willing Chamber

- **Newport/Middletown**
  - High impacts, East Bay region
  - Large economic impact for state
  - Willing Chamber
  - Potential for lessons learned

- **Warren/Bristol**
  - High impacts
  - Socioeconomic diversity

- **Woonasquatucket River, Providence to Smithfield**
  - Urban to Rural
  - Riverine
  - Willing Chamber

- **Warwick/Cranston (alternate)**
  - Positive community involvement
  - Coastal AND inland
**Outreach**

*Conduct 5-7 key interviews.*

*Hold 4-6 focus groups of ~8 people each in strategic areas throughout the state. Goal of reaching 35-40 individuals.*

*Use Draft Risk Reduction Guides for Outreach.*
  - Developed 5 draft guides for different business typologies.
  - Guides will be used for key interviews and focus groups.
Guide for Making Rhode Island Small Businesses Resilient

What are Typical Automotive Business Assets?
- Vehicle Inventory
- Utilities/Mechanics
- Repair Equipment
- Customer Documentation
- Employees

How you can protect these assets
- Elevate the parking area, or develop an agreement with an entity that will allow for dry and resilient parking to relocate vehicles during an event.
- Elevate utilities and building mechanics above flood level to minimize damage.
- Elevate mechanical equipment, and store smaller tools at elevated heights or in waterproof storage.
- Backup important electronically stored information, such as customer information, to a secure and safe server.
- Develop a plan that employees are versed in if there is an event, and provide employees with materials on ways to be resilient at home.

Know Your Risk
- Know your risks specific to your property and understand the potential impacts climate change presents.
- Know your infrastructure and assets and understand which elements are more vulnerable to flooding.
- Know your coverage. Understanding your insurance policy is important and vital to recovery after an event.

Make a Plan
- Plan for multiple scenarios. Climate change can alter scenarios, such as flooding, storm surge, and wind.
- Plan for emergencies. Develop an emergency plan that will serve as a step-by-step guide for response and communication.
- Plan for redundancy. Keep your business in operation, or restore operation.
- Plan ways to ensure prompt supply delivery after an event, and ways to inform customers of status. Develop multiple methods of protecting your inventory.

Take Action!
- Evaluate your plans and implement your strategies to increase redundancy and improve redundancy.
- Actions items might include: installing a backup generator, building relationships with multiple suppliers, elevating machinery and equipment necessary for operation.
RISBDC reaching out to clients in the pilot area municipalities to gauge interest in:

- Focus Groups (they come to us)
- Assessments (we go to them)
- Review of the Risk Reduction Guides.

### Initial Results from Outreach

<table>
<thead>
<tr>
<th>Organization</th>
<th>Focus Group</th>
<th>Interview</th>
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<tbody>
<tr>
<td>Ocean Community Chamber of Commerce (Lisa Konicki)</td>
<td>Members (2)</td>
<td>October 1</td>
</tr>
<tr>
<td></td>
<td>October 18</td>
<td></td>
</tr>
<tr>
<td>Southern RI Chamber of Commerce (Elizabeth Berman)</td>
<td>Board</td>
<td>October 2</td>
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<tr>
<td></td>
<td>November 14</td>
<td></td>
</tr>
<tr>
<td>Providence Chamber (Janet Raymond)</td>
<td></td>
<td>October 19</td>
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<tr>
<td>Central RI Chamber (Lauren Slocum)</td>
<td>Members Date TBD</td>
<td>October 10</td>
</tr>
<tr>
<td>Northern RI Chamber (Paul Ouellette)</td>
<td></td>
<td>October 10</td>
</tr>
<tr>
<td>Blackstone River Tourism (Bob Billington)</td>
<td></td>
<td>October 10</td>
</tr>
<tr>
<td>RI Builders Association Board (David Caldwell, J. Marcantonio)</td>
<td>Board</td>
<td>October 9</td>
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<tr>
<td></td>
<td>November 7</td>
<td></td>
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<tr>
<td>RI Hospitality Association (Dale Venturini)</td>
<td>Members (2)</td>
<td>October 12</td>
</tr>
<tr>
<td></td>
<td>November 1</td>
<td></td>
</tr>
<tr>
<td>Eating with the Ecosystem (Kate Masury)</td>
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<td>October 3</td>
</tr>
<tr>
<td>Aquaculture/fisheries</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>Marine Trades (Wendy Mackey or Board member)</td>
<td>TBD</td>
<td></td>
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<tr>
<td>RI Nursery and Landscape Association (S. Brawley)</td>
<td>TBD</td>
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<tr>
<td>RI Manufacturers Association (Dave Chenevent)</td>
<td>TBD</td>
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Vulnerability Analysis

Complete vulnerability analysis of 100 small businesses in selected pilot areas.

- Risk is a function of vulnerability and frequency/severity

- Objective is to view and understand the following:
  - Locational aspects that make a business vulnerable (located in floodplain)
  - Business characteristics that make it vulnerable (what are the human and non-human resources)
  - Building characteristics that make it vulnerable (construction, layout)
  - Utility vulnerabilities (what is exposed, what is protected)
Vulnerability Analysis Checklist

Checklist approved by Steering Committee on 10/22

<table>
<thead>
<tr>
<th>Date</th>
<th>Creator</th>
<th>Type</th>
<th>Notes</th>
</tr>
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<tbody>
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</table>

**System | Description | Notes**
--- | --- | --- |
**External Features** | **External Flood Control** | **Seawall** | **Bulkhead** | **Berm** |
**Grading Around Site** | **Towards** | **Away** | **Neither** |
**First Floor** | **Floor Material** | **Hardwood** | **Cement** | **Carpet** |
**Internal Wall Material** | **Drywall** | **Wood** | **Cement** | **Metal** |
**Major Appliances** | | | | |
**Basement (if applicable)** | **Floor Material** | **Hardwood** | **Cement** | **Carpet** |
**Internal Wall Material** | **Drywall** | **Wood** | **Cement** | **Metal** |
**Major Appliances** | | | | |

**Disaster Preparedness Questions:**
- Are you aware of the hazards that could impact your business? Y/N
- Are you concerned about your business’ future hazard exposure? Y/N
- Are you aware of mitigation assistance programs? Y/N
- Are you aware of mitigation options? Y/N
- Are these mitigation options accessible to you? Y/N
- Do you have an Emergency Plan? Y/N
- Are your employees aware of the details of the Emergency Plan? Y/N
- Have you created an Emergency Employee Contact List? Y/N
- Do you have savings set aside for needs in the event of a disaster? Y/N
- Do you have flood insurance for the building? Y/N
- Do you have content insurance? Y/N
- Do you have other disaster insurance? Y/N
- Are you aware of the details of your insurance policies? Y/N
- Do you have electronic data backups for your business files? Y/N
- Do you have a Business Continuity Plan or a Disaster Plan? Y/N
- How are employees notified in the event a natural disaster requires the business to temporarily close? Y/N
- Are employees paid if the business is closed for an extended period of time? Y/N
- For how long would you be able to stay in business if you had to close for an extended period of time? Y/N
Vulnerability Analysis

• MMI and RPS will split task – each conducting 50 assessments.
• 90 1-hour assessments, 10 2-hour assessments.
• Sort businesses by typology/size to target businesses in pilot areas
• Approach
  • Standard project overview
  • Check list review w/field personnel
  • Supply list
  • Photo list
  • Geographic division between staff

- Retail
- Food Service
- Service Professional
- Art/Entertainment
- Aqua/Agriculture
- Manufacturing
- Building/Construction
- Hospitality
- Historic Resource
- Automotive
Typical questions to ask during reconnaissance

- What types of impacts have occurred?
- What was the hazard and what were the consequences?
- What is the tenure of occupancy?
- Do you own or rent? Are you allowed to modify the building?
- What is the number of employees? Total or shift?
- How many employees work from home?
- Is your company’s IT located here? Who are the service providers?
- Do you have a business continuity plan? Disaster plan?
- Have you filed insurance claims? NFIP or other kinds? Are you comfortable sharing the nature and amounts of the claims?
- Have you experienced challenges such as your staff getting to work, or your vendors being able to supply their services or goods?
## Risk Reduction Options

<table>
<thead>
<tr>
<th>Structural</th>
<th>Operational</th>
<th>Logistical</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wet floodproofing</td>
<td>• Communications plan</td>
<td>• Modify insurance coverage</td>
</tr>
<tr>
<td>• Dry floodproofing</td>
<td>• Chain of command</td>
<td>• Vendor flexibility</td>
</tr>
<tr>
<td>• Hurricane shutters</td>
<td>• Backup/standby power</td>
<td>• Customer relations</td>
</tr>
<tr>
<td>• ‘Code-plus’ options</td>
<td>• Backup IT/servers/data</td>
<td></td>
</tr>
<tr>
<td>• Flood walls</td>
<td>• Work from home ability</td>
<td></td>
</tr>
</tbody>
</table>

*Table highlights various risk reduction strategies grouped into structural, operational, and logistical categories.*
Questions?

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