State of Rhode Island:
Risk Reduction for Small Business Resiliency

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2018 CAFM Annual Meeting

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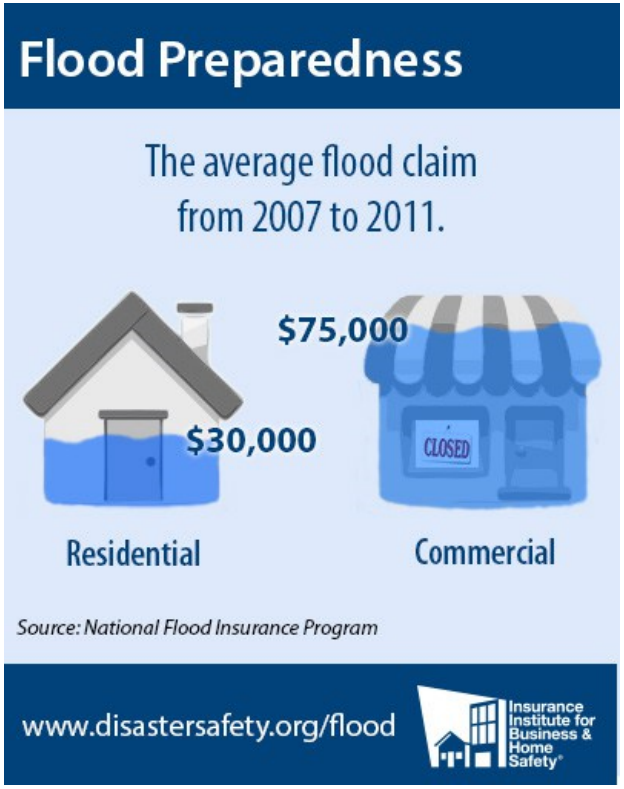
Risk Reduction for Small Business Resiliency

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



Risk Reduction for Small Business Resiliency

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

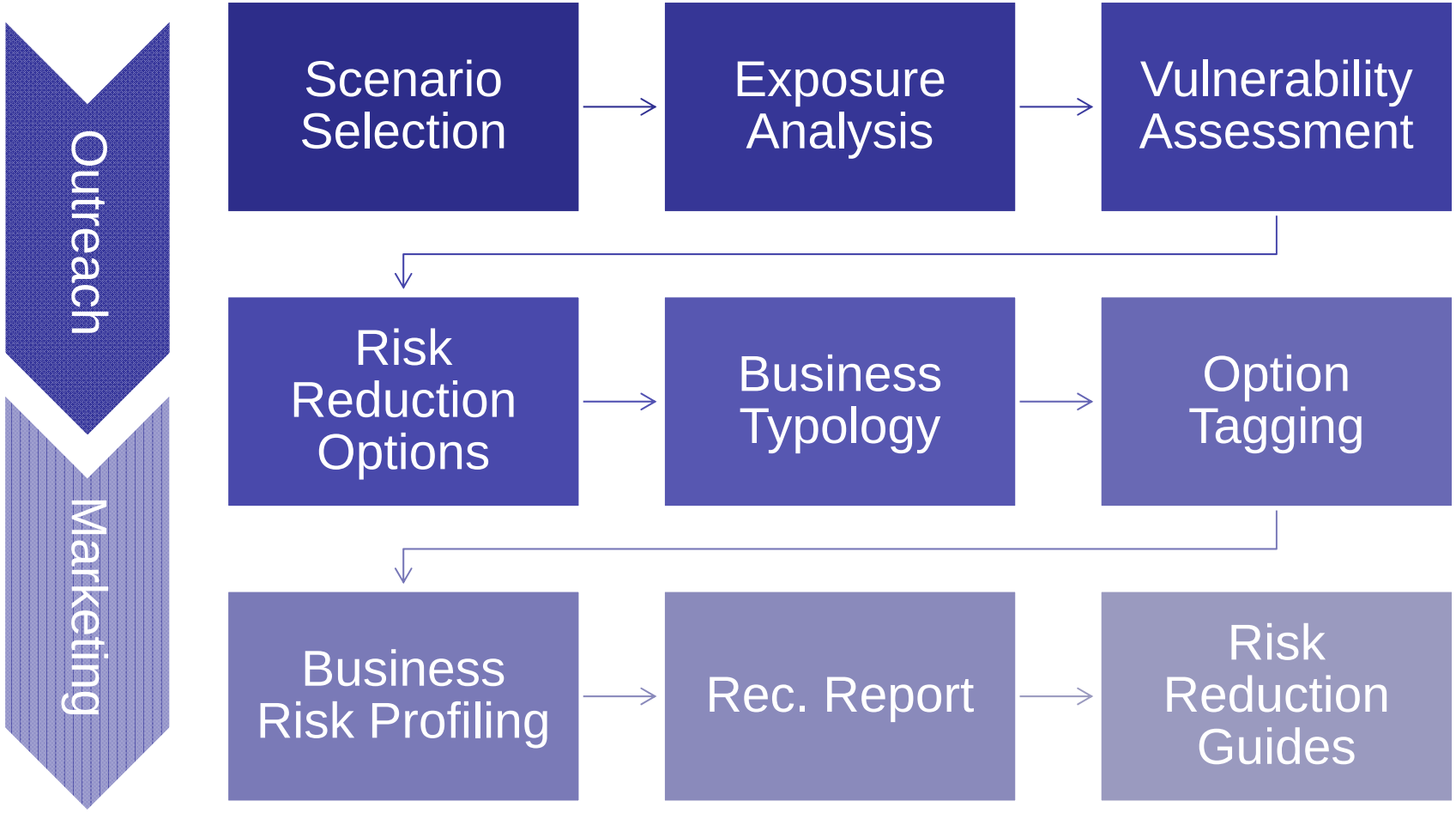
- RI Division of Statewide Planning
- Steering Committee
- RPS
- Milone & MacBroom
- Coastal Resources Center, URI
- Climate Action Business Association
- RI Small Business Development Center
- Spaulding Environmental Associates

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

RPS

Project Tasks



Scenario Selection

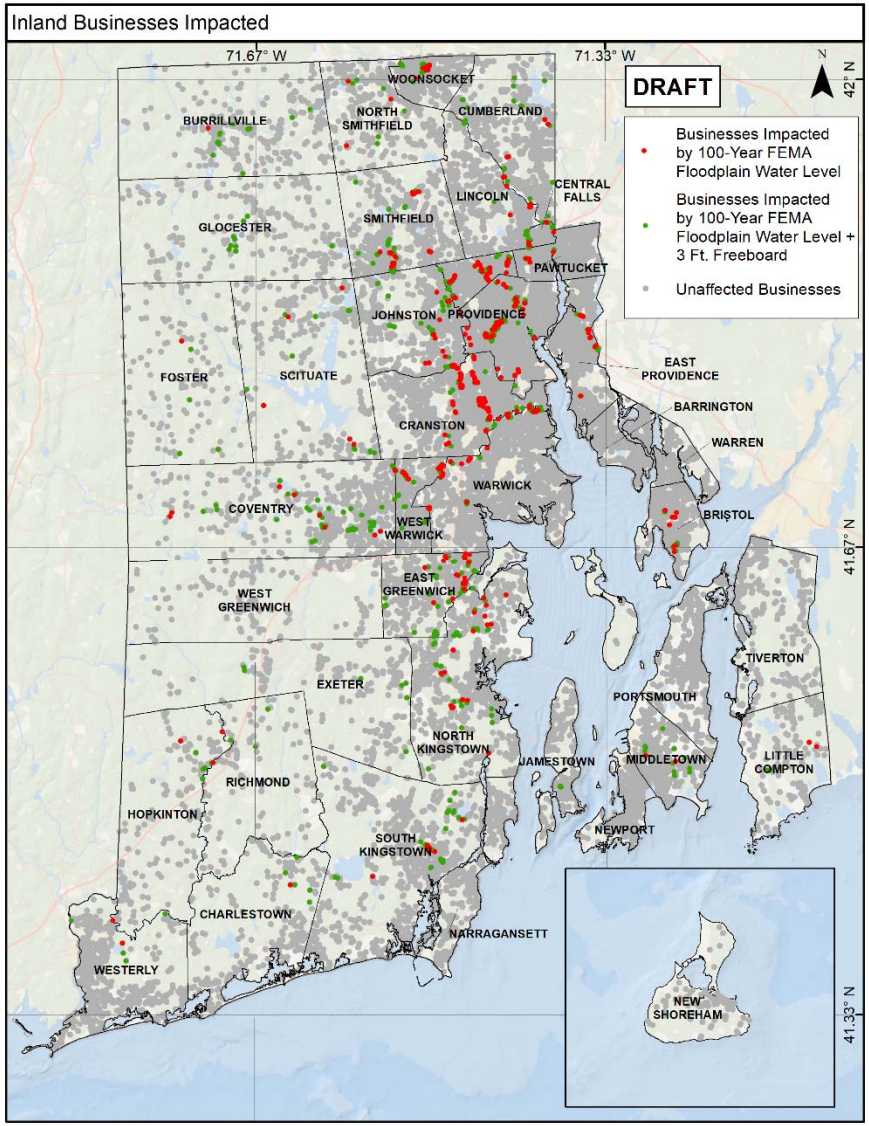
Event Type	Coastal Flooding	Inland Flooding
Moderate	25-Year Water Level	100-Year Flood
Severe	100-Year Water Level + 2 Feet of Sea Level Rise	100-Year Flood + 3 Feet of Freeboard

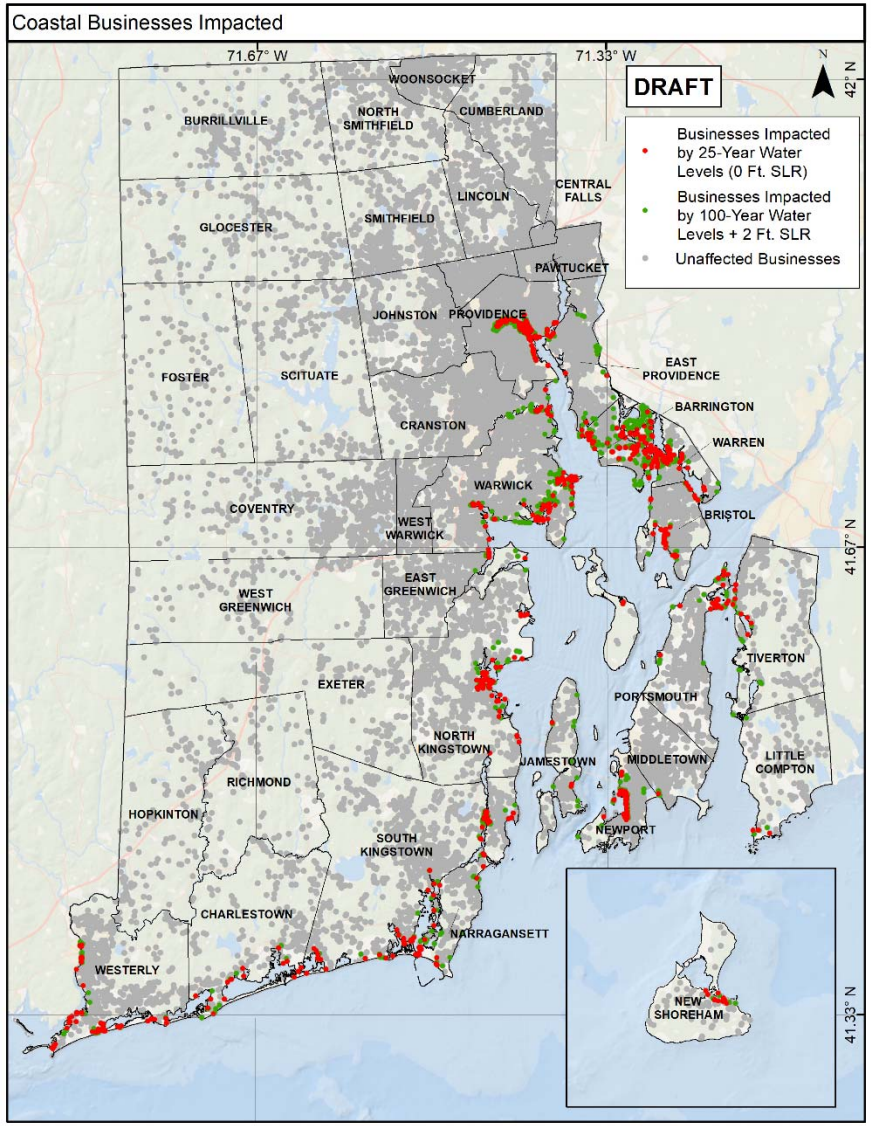
Exposure Analysis Methods

- 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

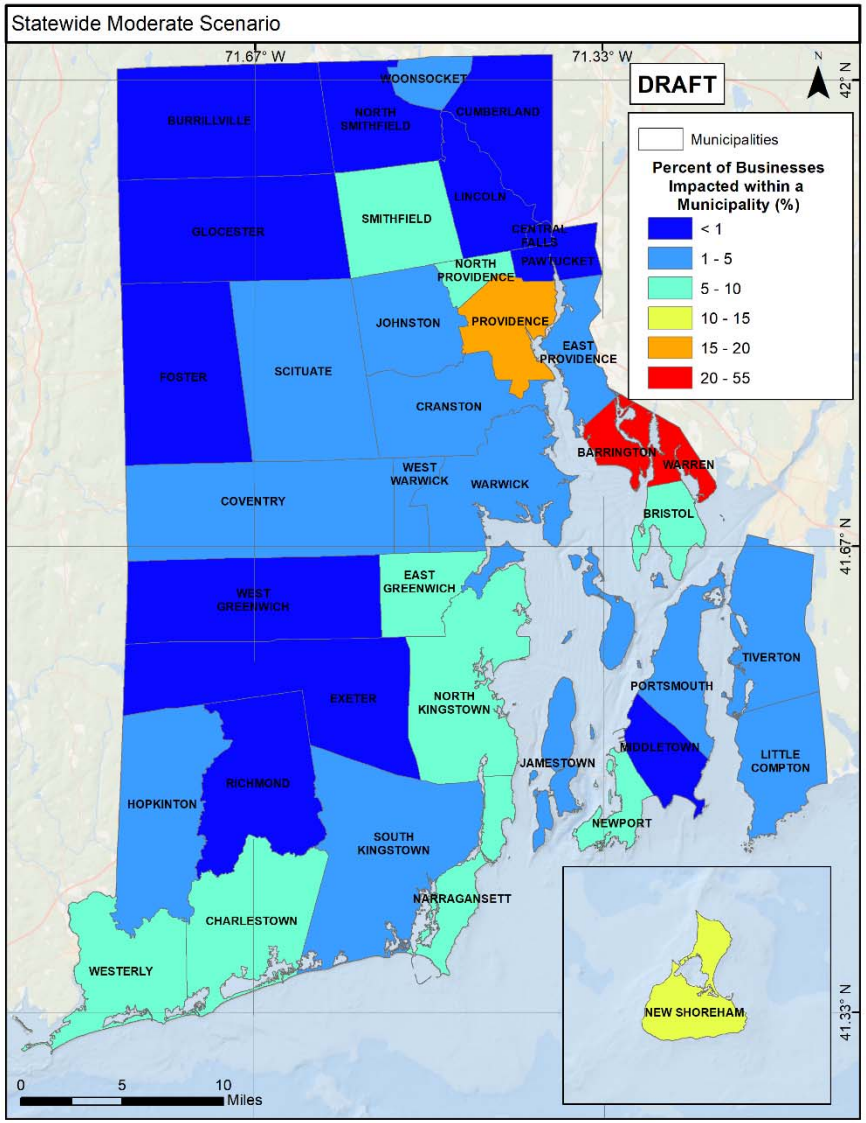
Locations of Businesses Impacted by Scenario

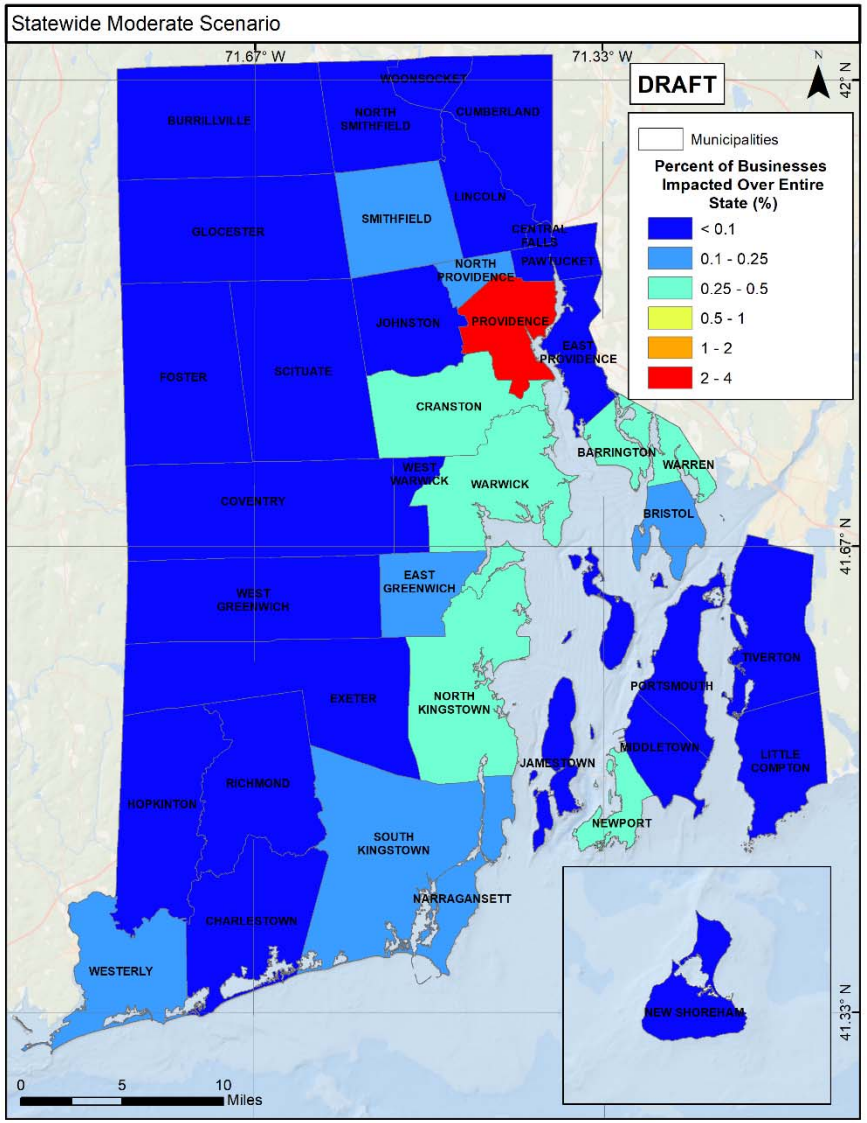




Exposure Analysis

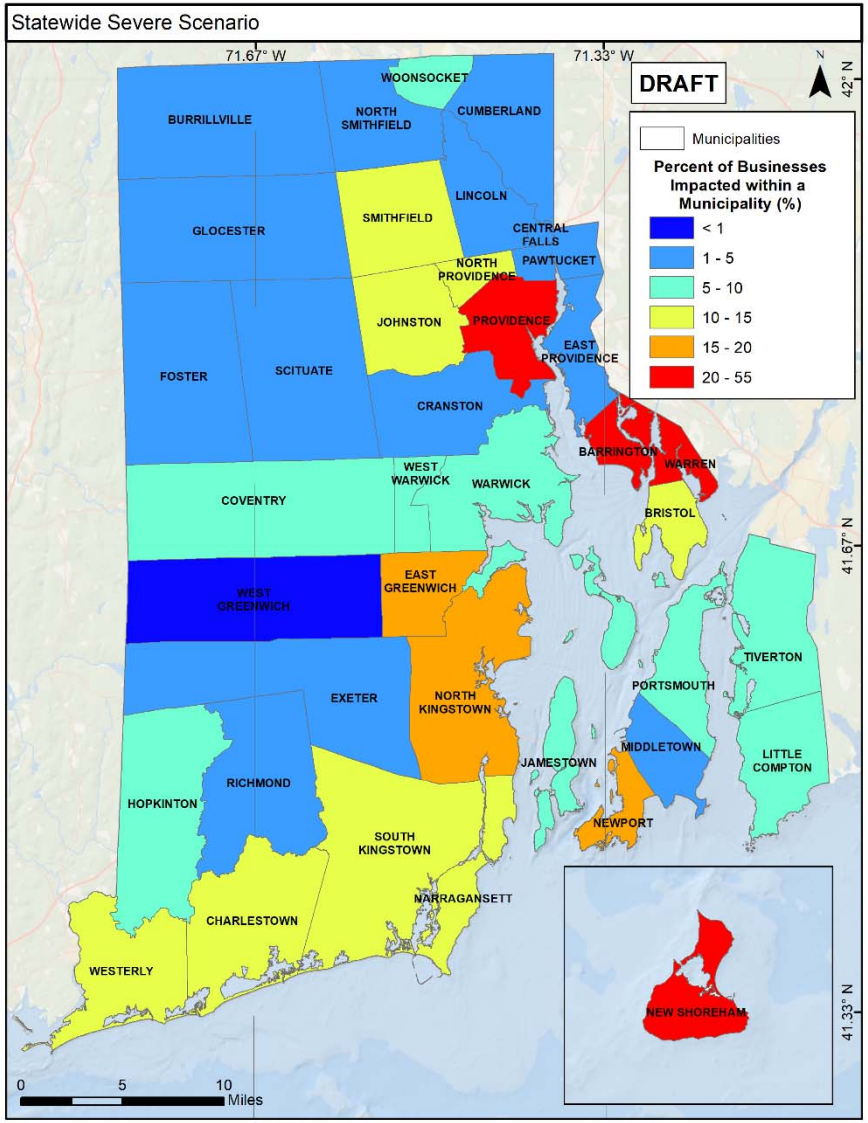
Moderate Scenario – Percent of Businesses Impacted

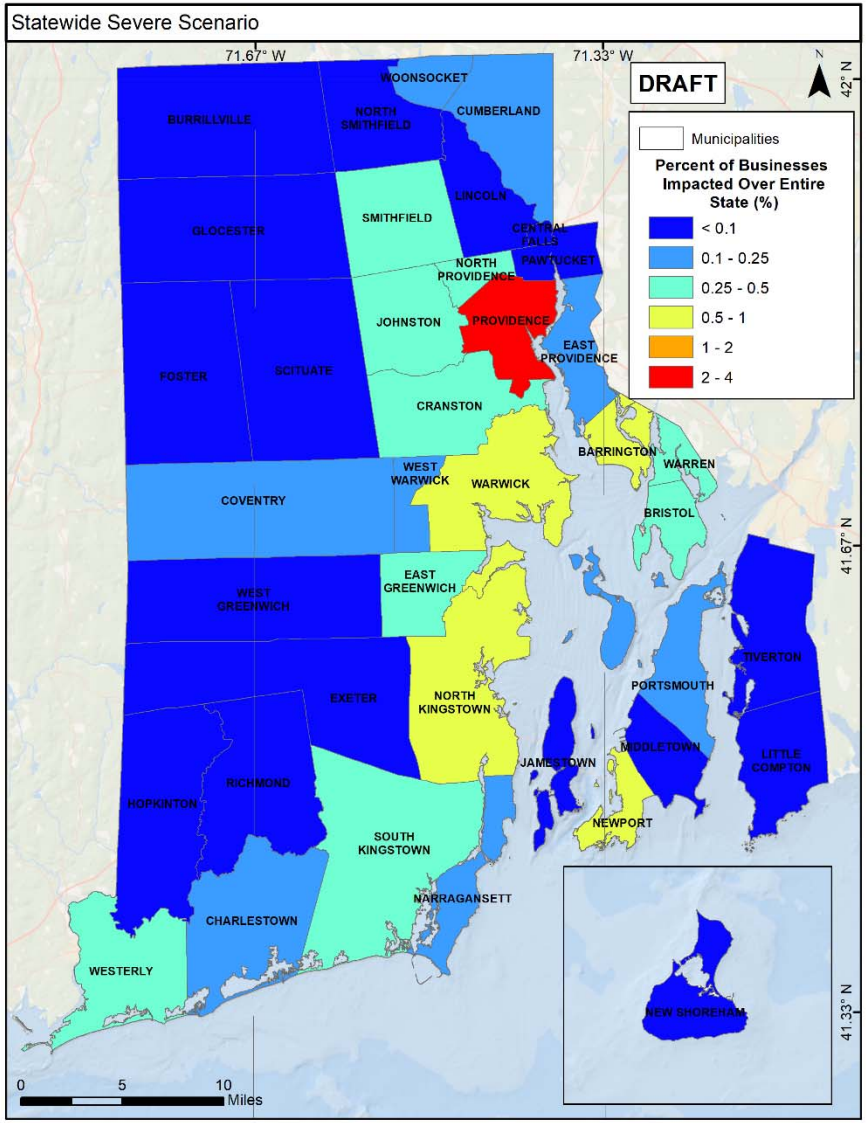




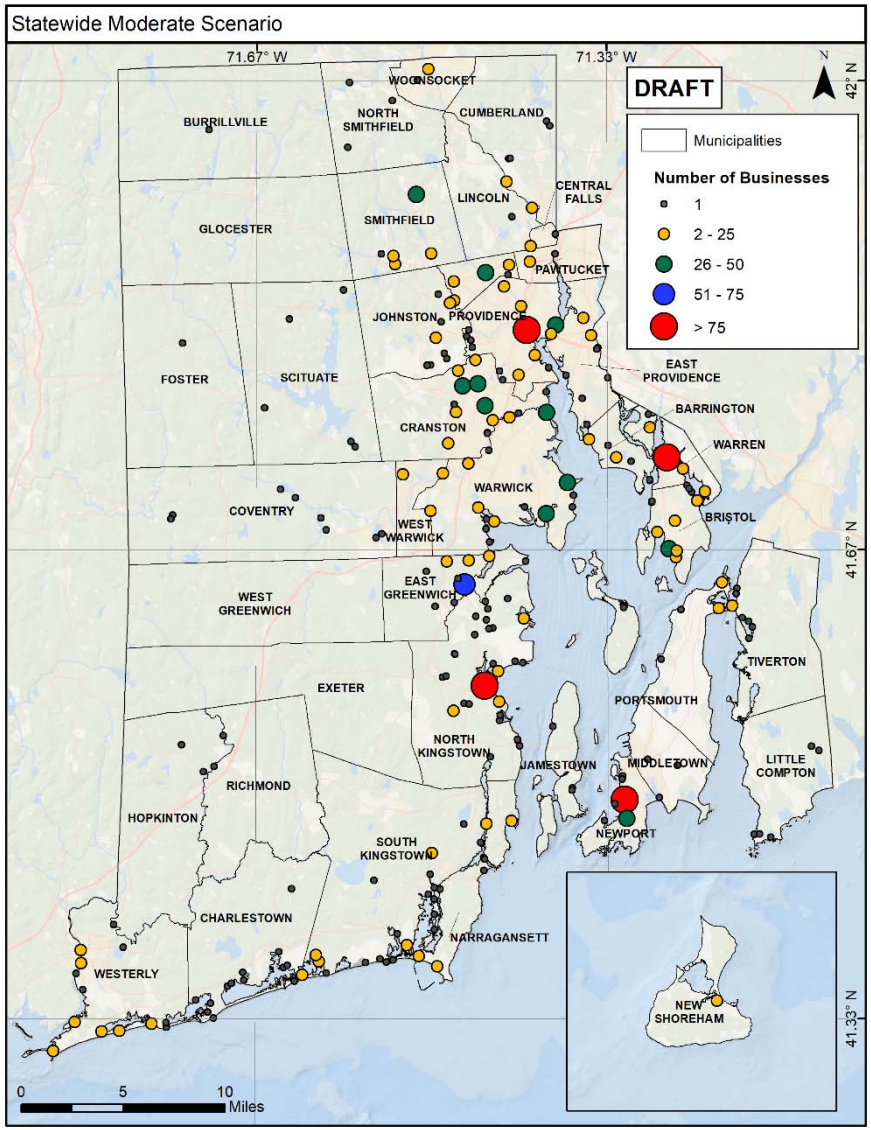
Exposure Analysis

Severe Scenario – Percent of Businesses Impacted

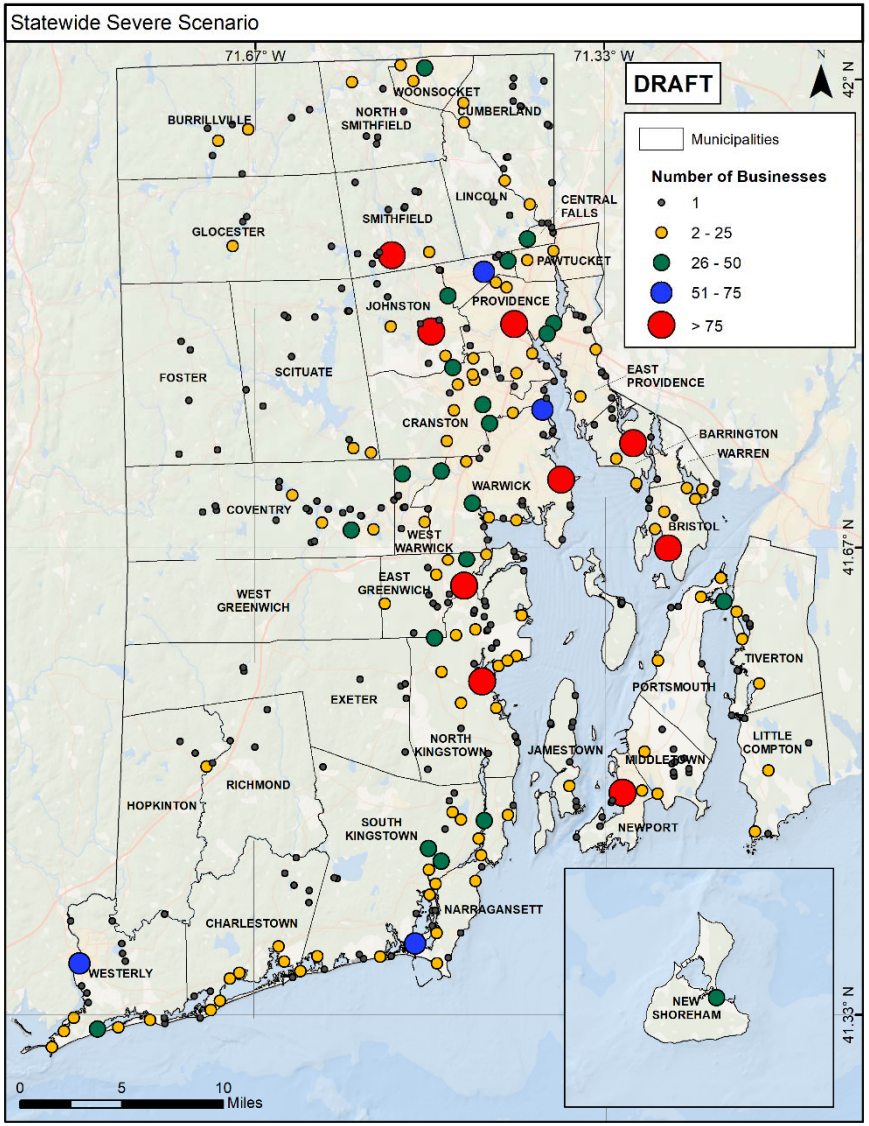




Exposure Analysis
Moderate Scenario – Number of Businesses Impacted



Exposure Analysis
Severe Scenario – Number of Businesses Impacted



Pilot Area Selection

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 Selection

Pilot Area Recommendations

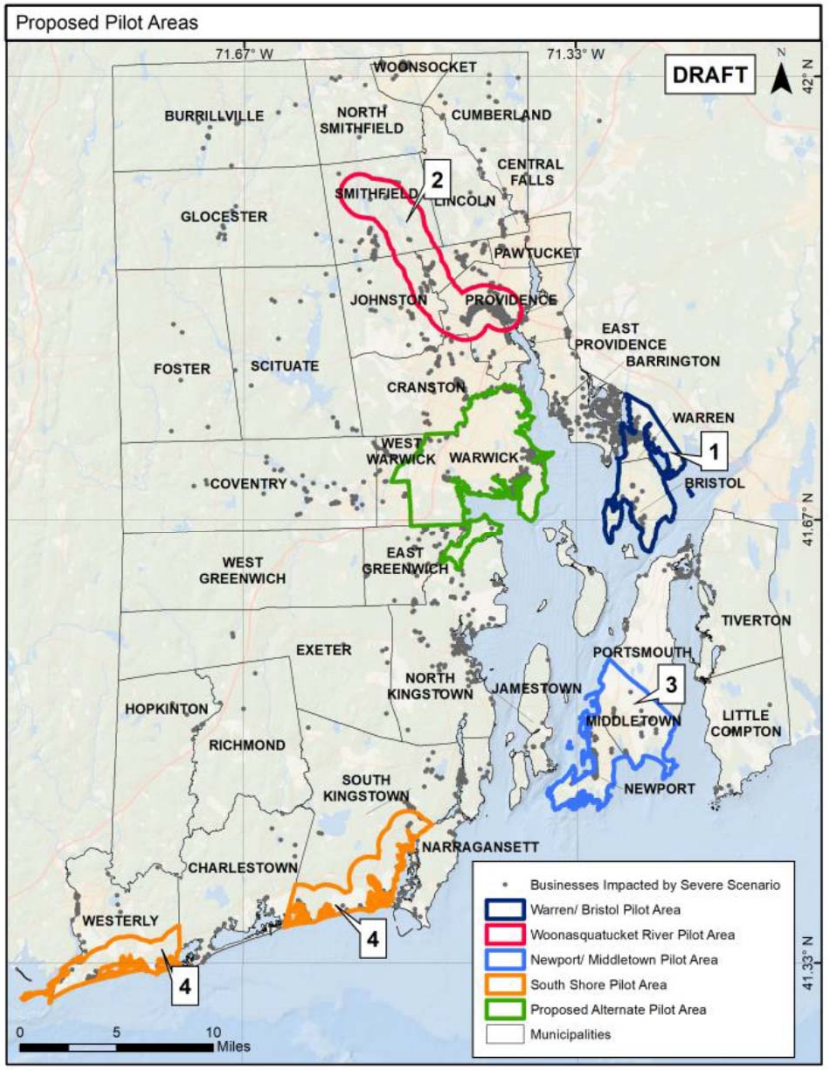
- **Westerly / South Kingstown**
  - High impacts from storms; received federal aid
  - Coastal
  - Willing Chamber
- **Smithfield**
  - Diverse, inland area
  - High inland flooding impacts
- **Newport**
  - High impacts, East Bay region
  - Large economic impact for state
- **Warren**
  - High impacts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

Pilot Area Selection

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

Pilot Area Selection



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.

Draft Risk Reduction Guides

Guide for Making Rhode Island Small Businesses Resilient

AUTOMOTIVE

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 present.
- ✓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 resiliency and improve redundancy.
- ✓Actions items might include: installing a backup generator, building relationships with multiple suppliers, elevating mechanics and equipment necessary for operation.

Initial Results from Outreach

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

RISBDC reaching out to clients in the pilot area municipalities to gauge interest in:

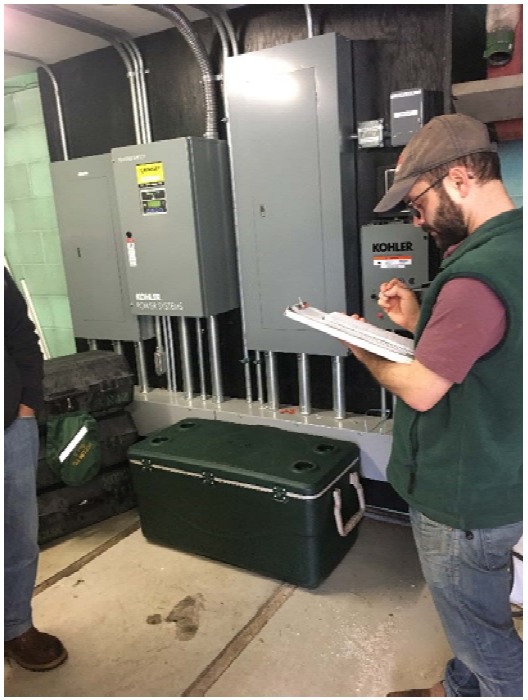
- Focus Groups (they come to us)
- Assessments (we go to them)
- Review of the Risk Reduction Guides.

Vulnerability Analysis

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

DATE: **OBSERVER:** **SITE:** **3**

Flood-Related Questions

Flood Zone: _____ BFE _____; Adjacent Flood Zone: ____ BFE _____
Name of Flood Source (river name, etc.): _____
Distance from High Water Mark:
__Over water __ Adjacent __ Less than 100 feet __ Less than 500 feet __ More than 500 feet
Over-water: __Entirely __Mostly __Partially __No

Is business located on the coastline? If so, answer these questions

Type:	Wetland	Beach	Dune	Bluff	Notes
Material:	Sand	Gravel	Boulder	Bedrock	
Environment:	Erosive	Depositional			
Stabilization:	Vegetation	Rip-rap	Seawall / Bulkhead Groin / Breakwater	Wood/Cement/ Metal/Stone/Other	

Other Risk Factors

	Secure	Other
Fuel tanks / Generators	Y / N ?	
Trees/bushes	Y / N ?	
Moorings	Y / N ?	
Dock	Y / N ?	
Parked vehicles/boats	Y / N ?	
Septic Tank	Y / N ?	
Generator	Y / N ?	
Dumpster/ Spent Oil	Y / N ?	
Other visible debris	Y / N ?	
Buildings/Outstructures	Y / N ?	
Fence (non-seawall)	Y / N ?	
Other	Y / N ?	

Building

- Building plans available (Y / N)
- **FFE:** _____ Elevation of Lowest Horizontal Beam if on pilings _____
- **Structure:** __Wood Frame __Steel Frame __ Cement Block __Masonry
- **Foundation:** __Slab-on-grade __Crawl Space __ Basement __ Pilings/Pier
- **Structure Age:** _____ Historic: Y N May Be Eligible
- **1st floor contains:**

  _____
- **Outbuildings:**

Building Sketch – Attach sketch and/or photgraphs
Include:

- Building outline
- Low openings
- Key utilities
- Water

DATE: **OBSERVER:** **SITE:** **4**

System	Description	Notes
External Features	External Flood Control	__Seawall __Bulkhead __Berm
	External Wall Material	
	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	
Low Entry Points into Building	Doorways	
	Windows	
	Utility Openings	
	Other	
Utility Room (U.R.)	Contains	
	Location	__ basement __ first floor __ upper level __ outdoors
	Notes	

Utility	Location				Relative Elevation	Primary Vulnerability	Notes
	U.R.	Basement	FF	Outdoors			
HVAC: Condensers					___ ft		
A/C – window / wall					___ ft		
Water Heater					___ ft		
Furnace					___ ft		
Electrical Panel					___ ft		
Electrical into building					___ ft		
Electrical Outlets					___ ft		
Plumbing: Potable					___ ft		
Fuel Tanks					___ ft		
Generator					___ ft		
Other					___ ft		

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

Vulnerability Analysis

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

Structural	Operational	Logistical
• Wet floodproofing • Dry floodproofing • Hurricane shutters • 'Code-plus' options • Flood walls	• Communications plan • Chain of command • Backup/standby power • Backup IT/servers/data • Work from home ability	• Modify insurance coverage • Vendor flexibility • Customer relations

Risk Reduction for Small Business Resiliency

Questions?

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