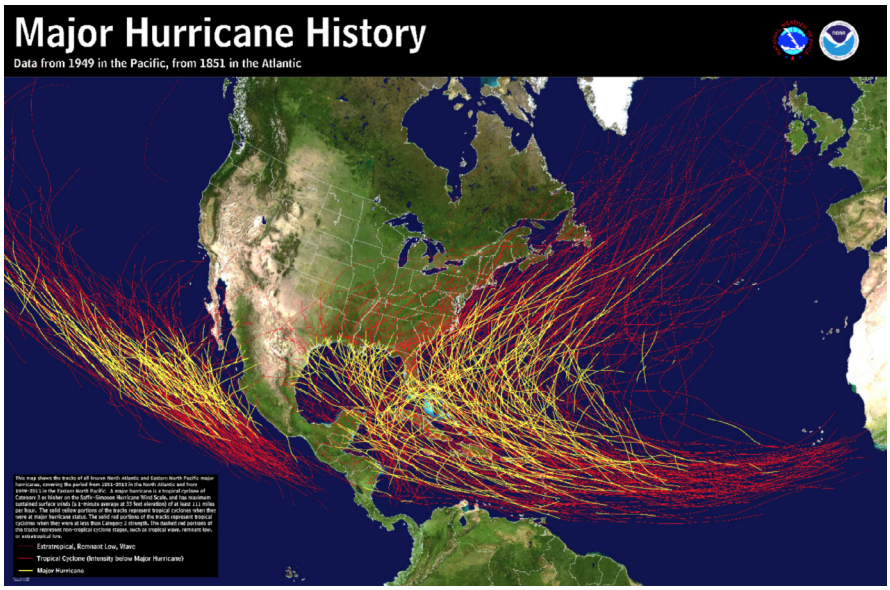
Ready Business®

HURRICANE TOOLKIT

WHY SHOULD ORGANIZATIONS CARE ABOUT HURRICANE RISK?

Significant portions of the United States are at risk for the effects of tropical storms and hurricanes. It is important that organizations throughout the country, including associations, businesses, and community groups, understand the risks and potential impacts and prepare accordingly.

The *Ready Business Program* for Hurricane and the Preparedness and Mitigation Project Plan allow users to take action to protect employees, protect customers, and help ensure business continuity.



Source: "Major Hurricane History." Map. National Weather Service.

NATURAL DISASTER IMPACT

IMMEDIATE	ONE YEAR LATER	THREE YEARS LATER
40% OF SMALL BUSINESSES WON'T REOPEN	**25%** MORE SMALL BUSINESSES WILL CLOSE	**75%** OF BUSINESSES WITHOUT A CONTINUITY PLAN WILL FAIL

Source: 2014 data from the Federal Emergency Management Agency (FEMA) and US Department of Labor

Table of Contents

Introduction

Should your organization be concerned about tropical storms and hurricanes? In many instances, yes. Many parts of the United States, including Atlantic and Gulf of Mexico coastal areas, Hawaii, parts of the Southwest, Puerto Rico, the Pacific Coast, and the U.S. Virgin Islands and territories in the Pacific may be directly affected by heavy rains, strong winds, wind-driven rain, coastal and inland floods, tornadoes, and coastal storm surges resulting from tropical storms and hurricanes.

The National Hurricane Center reports the greatest threat to life and property along the coasts are storm surge and large waves caused by hurricanes. In addition, heavy rainfall can result in extensive flooding, including inland flooding. According to the National Oceanic and Atmospheric Administration, inland flooding accounts for more than 50 percent of hurricane-related deaths each year. Furthermore hurricane-force winds and windborne debris from tropical storms and hurricanes can destroy buildings and mobile homes and pose a major risk to people and property.

If your organization is vulnerable to hurricanes, it is important that you understand your risk, develop a preparedness and mitigation plan, and take action. Doing so will not only increase the safety of employees and customers, but it will help you remain in business after disasters, such as tropical storms and hurricanes, strike. Maintaining business continuity is

important. When you are able to continue operations after a disaster, you also improve your community's ability to recover.

THE *READY BUSINESS PROGRAM* MOVES ORGANIZATIONAL LEADERS THROUGH A STEP-BY-STEP PROCESS TO:

✔	Identify Your Risk
✔	Develop a Plan
✔	Take Action
✔	Be Recognized and Inspire Others

Following these steps in the *Ready Business Program* as a part of your overall business continuity planning will help protect assets (people, property, operations); sustain the capability to provide goods and services to customers and/or supply chain; maintain cash flow; preserve competitive advantage and reputation; and provide the ability to meet legal, regulatory, financial, and contractual obligations.

Nonprofit organizations can also benefit from the *Ready Business Program* as business continuity will protect staff, clients, and property while allowing operations to continue.

Experts estimate that 75 percent of businesses without continuity planning will fail within three years of a disaster. The *Ready Business Program* offers information to complete continuity planning, including resources from the Federal Emergency Management Agency (FEMA) *Business Continuity Plan* website.

Once completed, the *Ready Business Program* will provide you with the tools to plan, take action, and become a Ready Business by addressing preparedness and mitigation for your STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and SERVICE. And you will also have the opportunity to apply for recognition as a member of the Ready Business Community.

Introduction: Program Overview

Organizations can achieve six levels for recognition through the *Ready Business Program*. The levels include **STAFF, SURROUNDINGS, SPACE, SYSTEMS**, **STRUCTURE,** and **SERVICE.** The first five levels can be achieved either independently or as a group. The **SERVICE** level is achieved by completing requirements for **STAFF**, **SURROUNDINGS**, **SPACE, SYSTEMS**, and **STRUCTURE** levels in addition to the **SERVICE** requirements.

STAFF includes planning and preparedness activities for the protection of your staff.

SURROUNDINGS includes those elements that potentially pose a threat during an event, such as fences, flagpoles, and trees.

SPACE includes the contents of your workspace, such as inventory, filing cabinets, shelving, and other furniture.

SYSTEMS includes utility systems that support the operation of the building and are generally located on the roof.

STRUCTURE includes architectural and structural elements of the building, especially construction types that may be vulnerable to damage or failure during an event.

SERVICE includes the opportunities for your organization to engage and serve the community following an event. You may only qualify for SERVICE to others after you have prepared your own organization first.

It is important to remember that injury, damage, concurrent damage, cascading disasters such as fire following the event, business interruption, or even increased repair or recovery costs can come from failure to prepare or mitigate. As a result, the first step in the *Ready Business Program* is to complete a *Back-to-Business Self-Assessment* to identify vulnerabilities from any source.

The *Ready Business Program* is intended to recognize and acknowledge organizations who complete preparedness and mitigation actions to protect employees, customers, and continuity. You can get started today by following the steps provided.

For more information or assistance, contact ReadyBusiness@flash.org or (877) 221-7233.

Benefits

Peace of mind that your organization is prepared not only for hurricanes, but for other business interruptions and natural disasters.

Ready Business **window cling** to announce to your customers or clients and employees that you have taken steps to prepare your STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and are prepared to be of SERVICE after an event.

Ready Business **recognition certificate**.

Ready Business **web badge** to display on your organization's website.

Organization listing on Ready Business website.

Sample **news release** to recognize and acknowledge your organization's participation in the *Ready Business Program*.

Gain tips for **media placement**.

Inspire others to take steps to improve community resiliency.

Introduction: *Ready Business Program*

1 IDENTIFY YOUR RISK

Complete the *Back-to-Business Self-Assessment* to determine the specific areas your organization needs to address to prepare, mitigate risk, and return to operation following a disaster.

2 DEVELOP A PLAN

1. Based on the information in the *Back-to-Business Self-Assessment*, complete the Ready Business Preparedness and Mitigation Project Plan for STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and SERVICE to identify preparedness and mitigation actions needed to ensure safety and business continuity. (Note: *Completing this plan is a critical first step toward recognition as a Ready Business.*)

2. Review the *Quick Reference Guide* to determine which preparedness and mitigation actions to take based on the potential impacts to your organization.

3. If you need assistance with Ready Business planning, contact your local emergency management office to discuss local hazards, identify local best practices in disaster safety and resilience, or connect with other Ready Businesses in your community.

3 TAKE ACTION

1. Now that you've created your Preparedness and Mitigation Project Plan, make sure the building owner approves it if you are leasing or renting your building. (Note: *Be sure to check with your local building department to secure required permits prior to performing any retrofitting or other mitigation activity.*)

2. Perform preparedness and mitigation activities as prioritized in the Preparedness and Mitigation Project Plan. Document your actions as instructed in the applications for STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and SERVICE with signatures, photographs, receipts, or letters from an organization manager, engineer, or design professional, as applicable.

4 BE RECOGNIZED AND INSPIRE OTHERS

1. Complete the application at the end of the program for recognition as a Ready Business.

After you have completed these steps, you will be eligible to become a member of the Ready Business Community, and will enjoy the peace of mind of knowing you have done your part to promote safety, mitigate potential loss, and protect your organization.

1

Identify Your Risk:

Back-to-Business Self-Assessment

PLANNING SCENARIO

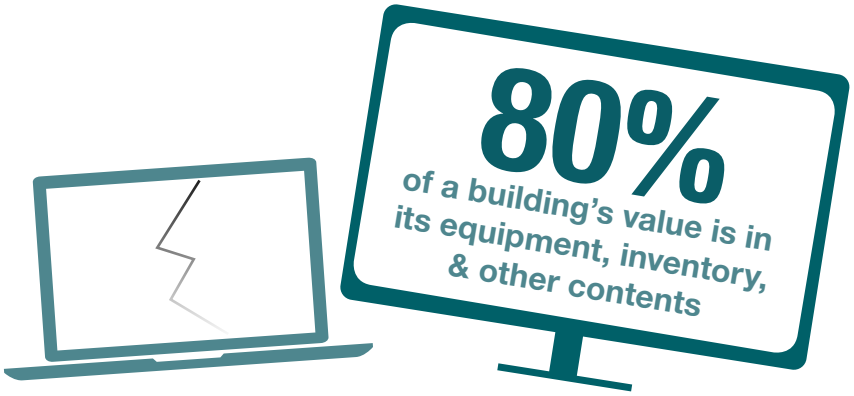
On August 1 of this year, a hurricane strikes your community and damages both the structure and the contents in the building where your organization operates. Due to damage, your building has been 'yellow tagged' during a rapid assessment by the building department and is closed. A more thorough assessment of your building damage is needed to determine if your structure is safe, or can be made safe, prior to reopening.

Due to the number of buildings damaged in your community, your building's detailed damage assessment will take place three days after the event. You should assume you will not be able to access your facilities for at least three days.

Depending on your type of organization, expect that either 50 percent of your inventory (product) is unsellable, or that 50 percent of your computers or other equipment was damaged during the event (choose whichever creates the greater impact on your organization). Assume that all utilities are interrupted.

Further, you should project that the disruptions will continue for one additional day. The assessment will show that the damage is repairable to the structure, so now you will need to address staff, contents, cleanup, repairs, and replacement.

Based on this scenario, complete the 13 questions on the following pages to identify your risk.



Source: FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage - A Practical Guide*

ASSESS YOUR READINESS

Based on the planning scenario, complete the 13 questions below to highlight areas that your Business Continuity and Preparedness and Mitigation Plan should address.

IMPACTS ON YOUR ORGANIZATION		RESOURCES THAT CAN HELP MINIMIZE DAMAGE, DISRUPTIONS, AND INJURIES
SYSTEMS/STRUCTURE		
1. Can your organization operate without any of the following: computers, copier, fax machine, files, inventory, or special equipment (e.g., x-ray equipment, cash register, credit card readers)?	❑ Yes ❑ No	*Ready Business Program* - SYSTEMS
2. Can your organization operate without any of the following: gas, power, water, internet, or telecommunications?	❑ Yes ❑ No	*Ready Business Program* - SYSTEMS
3. Can you still operate your organization without access to the damaged building(s)?	❑ Yes ❑ No	*Ready Business Program* - STRUCTURE
STAFF/CUSTOMERS/VENDORS/SUPPLIERS (PEOPLE)		
4. Can you meet payroll if your business income is interrupted? If yes, estimate how long.	❑ Yes ❑ No	Business Continuity Plan - PEOPLE
5. Are your employees able to commute to work?	❑ Yes ❑ No	Business Continuity Plan - PEOPLE
IMPACT ON YOUR ORGANIZATION		
6. Is your organization easily accessible to the public, your customers, and employees (e.g., parking)?	❑ Yes ❑ No	Business Continuity Plan - PEOPLE
7. Are you communicating status with employees, key customers, vendors, and suppliers throughout your recovery?	❑ Yes ❑ No	Business Continuity Plan - PEOPLE

OPERATIONS		
8. Can your organization operate without access to the damaged buildings?	❑ Yes ❑ No	Business Continuity Plan - OPERATIONS
9. Have you set priorities on what operations your organization needs to recover 1st, 2nd, 3rd, etc.?	❑ Yes ❑ No	Business Continuity Plan - OPERATIONS
10. Are your suppliers up and running or do you have sufficient parts/supplies on hand to continue without resupply?	❑ Yes ❑ No	Business Continuity Plan - OPERATIONS
11. Are you able to ship your product or provide services to your customers based on your current impacts, understanding that the demand for these products or services may drastically change?	❑ Yes ❑ No	Business Continuity Plan - OPERATIONS
12. Will you still have all your customers/clients after the disaster?	❑ Yes ❑ No	Business Continuity Plan - OPERATIONS
OVERALL OPERATIONS		
13. Can your organization survive losses if it is closed and/or inaccessible for 3 to 7 days?	❑ Yes ❑ No	*Ready Business Program* & Business Continuity Plan

For each question, 1-13, that you answered 'No', address the specific issue in the Ready Business Preparedness and Mitigation Project Plan, or in your Business Continuity Plan.

Use the *Ready Business Program* resources to help determine the potential for damage to buildings and contents as well as how you will reduce the damage to buildings and contents if it occurs. Resources are incorporated thoughout this toolkit and a comprehensive list can be found on pages 55-58.

2

Develop A Plan

1. Based on the information in the completed *Back-to-Business Self-Assessment*, create a Ready Business Preparedness and Mitigation Project Plan for your STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and SERVICE to identify critical preparedness and mitigation actions needed to ensure safety and business continuity. Completing this plan will bring you one step closer to recognition as a Ready Business.
2. Review the *Quick Reference Guide* to determine which preparedness and mitigation actions to take based on the potential impacts to your organization.
3. If you need assistance with Ready Business planning, contact your local emergency management office to discuss local hazards, identify local best practices in disaster safety and resilience, or connect with other Ready Businesses in your community.

STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, AND SERVICE

After you have identified the potential hurricane risks and determined the possible impacts on your organization, create a Preparedness and Mitigation Project Plan and decide which solutions you will use to reduce risks. The Preparedness and Mitigation Project Plan will support the business continuity planning and readiness process and bring you one step closer to recognition as a Ready Business.

READY BUSINESS PREPAREDNESS AND MITIGATION PROJECT PLAN

Organization:

Project Lead:

Name:

Title/Department:

Address:

Phone Number:

Email:

Executive Summary:

Background: *(Provide a summary description of risk to include priorities)*

Goals and Objectives:

2 | Develop A Plan: STAFF

Below is a list of key preparedness measures your organization can complete to help your staff get prepared for a hurricane event; however, the list is not all-inclusive. In addition, even if you are required to evacuate, being prepared allows you to stay in contact with your staff and provides a sense of comfort that your organization will be able to reopen after the disaster. For additional guidance on preparedness measures, please see the *Quick Reference Guide:* STAFF in this program.

By performing steps one through six, organizations will be eligible for recognition as a Ready Business – STAFF. The Suggested Actions are recommended, but not required, for recognition.

PREPAREDNESS ACTION	ASSIGNED TO	BUDGET	COMPLETION DATE
1 Develop Business Continuity and Crisis Communications Plans			
2 Conduct an Employee Awareness Campaign			
3 Develop an Employee Sheltering/ Evacuation plan and include an Emergency Supply Kit			
4 Conduct an Employee Training Session			
5 Conduct a Hurricane Drill			
6 Review Insurance Coverage (including Flood Insurance)/Create Inventory *(Note: See call out box on page 15 regarding special information on flood insurance.)*			
SUGGESTED ACTION: Develop an Employee Shelter/Evacuation Plan and Include an Emergency Supply Kit			
SUGGESTED ACTION: Purchase a NOAA Weather Radio for Monitoring During an Event/Download a Mobile Alerting App			

FLOOD INSURANCE IS CRITICAL FOR BUSINESSES AND EMPLOYEES ALIKE

Did you know that homeowners insurance doesn't cover flood? The National Flood Insurance Program (NFIP) was developed to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. The average flood insurance policy costs about $700 per year. To learn more about the NFIP and flood insurance in your area, visit FloodSmart.

2 | Develop A Plan: SURROUNDINGS

Below is a list of nonstructural hurricane mitigation activities that can be completed by a professional landscaper/ tradesman or professional engineer; however, the list is not all-inclusive. For additional guidance on nonstructural risks, please see the *Quick Reference Guide:* SURROUNDINGS in this program.

By performing all applicable activities, organizations will be eligible for recognition as a Ready Business – SURROUNDINGS.

SURROUNDINGS RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Signs	Reinforce signs to withstand expected wind pressures or remove prior to event.			
Flagpoles	Secure flagpole(s) to withstand expected wind pressures or remove prior to event.			
Landscaping/Trees	Consult a professional landscaper and develop a plan for hurricane-resilient landscaping.			
Fences	Ensure fencing is installed securely.			
Floodwalls and Levees	Consult with a floodplain manager or professional engineer regarding land use or code restrictions/requirements in your area. If elevating the structure or performing floodproofing techniques is not feasible, then consider designing floodwalls or levees on the property to attempt to repel floodwaters.			

2 | Develop A Plan: SPACE

Below is a list of nonstructural mitigation activities that can be completed by someone with common tools and readily available materials; however, the list is not all-inclusive. For additional guidance on mitigating these nonstructural risks, please see the *Quick Reference Guide:* SPACE in this program.

By performing all mitigation activities, organizations will be eligible for recognition as a Ready Business – SPACE.

NONSTRUCTURAL RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Contents	Determine and relocate your critical contents at least one foot above the Base Flood Elevation (BFE) or the Design Flood Elevation (DFE), whichever is higher.			
Chemicals	Establish a method for safeguarding chemicals in your Preparedness and Mitigation Project Plan.			

2 | Develop A Plan: SYSTEMS

Below is a list of nonstructural mitigation activities that may require a professional engineer to identify and evaluate appropriate mitigation steps; however, the list is not all-inclusive. For additional guidance on nonstructural risks, please see the *Quick Reference Guide:* SYSTEMS in this program.

By performing all retrofit items, organizations will be eligible for recognition as a Ready Business – SYSTEMS.

SYSTEMS RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Mechanical Systems	Consult a professional engineer or licensed professional trained in each system to ensure all systems and connections are designed to resist the expected wind loads and uplift and to develop solutions for protecting vital systems through elevation, anchoring, or other approved means.			
Fuel Tanks/Systems				
Electrical Systems				
Communications Equipment				
Lightning Protection Systems				
Utility Connections				
Antennas				
Other Rooftop Structures				
Sewer and Water Management Systems				
Potable Water Systems				

2 | Develop A Plan: STRUCTURE

Assessing structural and complex nonstructural risk requires the services of a professional engineer or other design professional to accurately evaluate and design reasonable mitigation measures. Below is a list of mitigation solutions; however, the list is not all-inclusive. For additional guidance on structural risks, please see the *Quick Reference Guide:* STRUCTURE in this program.

By performing a minimum of one retrofit item on this list, organizations will be eligible for recognition as a Ready Business – STRUCTURE.

STRUCTURAL RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Continuous Load Path – Foundation	Consult a professional engineer to evaluate elevation and continuous load path.			
Roof Systems	Consult a professional engineer and design the roof to withstand the expected wind loads, uplift, and water intrusion. Create a continuous load path, consider the integrity of roof coverings and decking, and install flashing to minimize water intrusion through vents or other openings.			
Skylights	Upgrade to pressure-related, impact-resistant skylights.			
Gable-End Bracing	Consult a professional to properly brace the gable-end walls.			
Soffits	Consult a professional and ensure that soffits are properly supported.			

STRUCTURAL RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Gutters and Downspouts	Install systems that are noncombustible and designed for wind speed and uplift resistance.			
Wall Systems	Consult a professional engineer and design the wall system to withstand the expected wind loads, pressure, and water intrusion. Create a continuous load path, ensure the integrity of wall coverings and sheathing, and install adequate flashing to minimize water intrusion.			
Openings • Garage/Rolling Doors • Windows • Exterior Doors	Install pressure-rated, impact-resistant exterior doors, windows, and garage/rolling doors. Install storm shutters or other tested and approved protection on any unprotected openings.			
Canopies, Awnings, and Carports	Ensure these items are designed to meet hurricane wind loads and uplift.			
Safe Room or Shelter	Install a safe room or shelter that meets FEMA Guidelines or ICC/NSSA 500 Standards. *Note: If the structure is located in a flood zone, safe rooms and shelters are not recommended.*			

STRUCTURAL RISKS	MITIGATION SOLUTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Best Available Refuge Area (BARA)	Consult a professional engineer to determine your BARA if a tornado shelter is not installed. *Note: Do not plan to shelter-in-place if your structure is in a flood or storm surge evacuation zone.*			
Elevation	Consult a professional engineer to evaluate elevating your structure so the lowest floor is at or above the BFE or DFE, whichever is higher.			
Wet Floodproofing	Consult a professional engineer to evaluate options for wet floodproofing the structure.			
Dry Floodproofing	Consult a professional engineer to evaluate options for dry floodproofing the structure.			

2 | Develop A Plan: SERVICE

Can your organization provide community service to others following a disaster? Identify and build local relationships to create a SERVICE component in your Business Continuity Plan. For additional guidance on the SERVICE component, please see the *Quick Reference Guide:* SERVICE in this program.

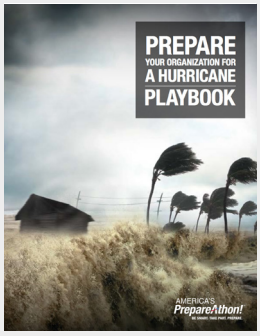
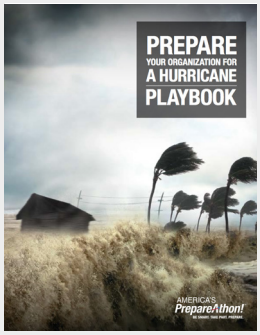
By performing all applicable preparedness activities in STAFF and mitigation actions in SURROUNDINGS, SPACE, SYSTEMS, and STRUCTURE, organizations will be eligible for recognition as a Ready Business – SERVICE.

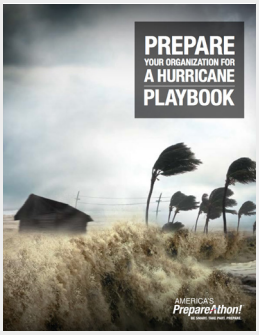
SERVICE ACTION	ASSIGNED TO	BUDGET	COMPLETION DATE
Contact Your Local Emergency Management Office			
Identify Ways to Engage and Participate in Your Community			

 RELIEF KITS	 CHARGING STATION	 FOOD PREPARATION	 VOLUNTEER
If your organization is open after the disaster, you could become a distributor or storage warehouse for Disaster Relief Kits. Providing a place for the supplies to be stored locally allows volunteer organizations to readily distribute them throughout affected areas.	Does your organization have electricity after the disaster? If so, you may want to become a volunteer charging station. Provide a safe, secure place for emergency responders, volunteers, and community members to charge their cell phones, power wheelchairs, and battery-powered tools.	Does your organization have the capability to prepare or serve meals? Providing a sanitary kitchen for emergency responders, volunteers, or community members to prepare or receive meals following a disaster is essential for rebuilding the community.	Not sure how your organization can directly contribute after the disaster? Volunteer. Contact your Local Emergency Manager and determine where volunteer opportunities exist in the community. You could prepare meals, sort debris, or even work at a local office of a volunteer organization. For additional ideas, visit National Voluntary Organizations Active in Disaster.

PREPAREDNESS ACTION	PREPAREDNESS SOLUTIONS	PREPAREDNESS RESOURCES
STEP 1: Develop Business Continuity and Crisis Communications Plans	Create a Business Continuity Plan that includes strategies for storing critical business documents and data.	Ready Business *Business Continuity Plan*
	Consult the *Disaster Resistant Business Toolkit.*	DRB Toolkit Disaster Resistant Business *Disaster Resistant Business (DRB) Toolkit*
	Assign a Business Continuity Team Leader responsible for implementing the Business Continuity Plan to bring your organization back to business after an event.	Ready Business *Business Continuity Plan*
	Create a Crisis Communications Plan that includes internal and external communication protocols for before, during, and after a disaster.	PREPARE MY BUSINESS.org *Crisis Communications*

PREPAREDNESS ACTION	PREPAREDNESS SOLUTIONS	PREPAREDNESS RESOURCES
STEP 2: Conduct an Employee Awareness Campaign	Conduct an employee awareness campaign to educate staff on disaster safety. The awareness campaign should include educating staff on the safest response before, during, and after a hurricane, including definitions of National Hurricane Center (NHC) terms, e.g., tropical storm/hurricane watch vs. warning. Address shelter locations, emergency communication plans and policies, when to evacuate (when advised), seeking high ground for flash flooding, and avoiding entering flood waters. The campaign should also provide guidance on critical actions after a hurricane event. Advise employees to learn their BFE by visiting the online FEMA Flood Map Service Center, contacting their insurance company, or calling their local floodplain management department. Reference *How to Prepare for a Hurricane* for additional content.	 *How to Prepare for a Hurricane.* Prepareathon FEMA Flood Map Service Center.

PREPAREDNESS ACTION	PREPAREDNESS SOLUTIONS	PREPAREDNESS RESOURCES
STEP 3: Develop an Employee Training Program	Develop a training program that provides activities for employee engagement before, during, and after a hurricane. Your training can be incorporated into established campaigns like *National Preparedness Month* and should focus on disaster preparedness and safety. Drills or exercises should be incorporated into the program. Include *Turn Around, Don't Drown!* into your messaging.	 *Prepare Your Organization for a Hurricane Playbook.* Prepareathon *Turn Around, Don't Drown!*
STEP 4: Conduct an Employee Training Session	Hold a preparedness discussion with your staff. Discuss what you have done to prepare for disasters, review your Business Continuity Plan, review your Crisis Communication Plan, and share awareness campaign key messages. Use the *Prepare Your Organization for a Hurricane Playbook* to facilitate this discussion and engage your employees. The discussion should: • Educate the employees about your business continuity and crisis communications plans; • Include basic first aid and CPR training; and, • Describe evacuation and sheltering plans.	 *Prepare Your Organization for a Hurricane Playbook.* Prepareathon

PREPAREDNESS ACTION	PREPAREDNESS SOLUTIONS	PREPAREDNESS RESOURCES
STEP 5: Conduct a Hurricane Drill	Conduct your disaster drill, but before you begin, contact your local emergency manager for additional ideas and to offer them a way to participate.	 *Prepare Your Organization for a Hurricane Playbook.* Prepareathon
STEP 6: Review Insurance Coverage (Including Flood Insurance)/ Create Inventory	Meet with your insurance agent annually to review your insurance, especially property coverage limits, deductibles, and coinsurance requirements. Maintain a current photo or video inventory of your premises, equipment, inventory, supplies, etc.	Ready Business *Insurance Coverage Discussion Form*
SUGGESTED ACTION: Develop an Employee Shelter/ Evacuation Plan and Include an Emergency Supply Kit	Develop an employee sheltering/evacuation plan to include an Emergency Supply Kit.	Ready Business *Emergency Supply List*

PREPAREDNESS ACTION	PREPAREDNESS SOLUTIONS	PREPAREDNESS RESOURCES
SUGGESTED ACTION: Purchase a NOAA Weather Radio for Monitoring During an Event/Download a Mobile Alerting App	Purchase a NOAA Weather Radio with single area message encoding (SAME) and download a severe weather alerts app for your mobile device. You may also sign up to receive emergency notifications from your local emergency services. Download *Be Smart. Take Part. Know Your Alerts and Warnings* for a summary of available notifications. Designate a Team Leader and assign them to monitor your NOAA Weather Radio during an event. Listen and heed instructions given by local emergency management officials. Have backup batteries and chargers.	*NOAA Weather Radio All Hazards* *Be Smart. Take Part. Know Your Alerts and Warnings*

RESOURCES:

FEMA. *Prepare Your Organization for a Hurricane Playbook.* Prepareathon

FEMA. *How to Prepare for a Hurricane.* Prepareathon

SURROUNDINGS RISKS	MITIGATION SOLUTION	REFERENCES
Signs Flagpoles Landscaping/Trees Fences	Consult a professional landscaper, and develop a plan for your surroundings that mitigates against damage from hurricanes by removing dead branches and other potential projectiles or falling trees.	FEMA *Remove Trees and Potential Windborne Missiles: Protecting Your Property from High Winds*
Floodwalls and Levees	Consult with a floodplain manager or professional engineer regarding land use or code restrictions/requirements in your area. If elevating the structure or performing floodproofing techniques is not feasible, then consider designing floodwalls or levees on the property to attempt to repel floodwaters.	FEMA FEMA P-936, *Floodproofing Non-Residential Buildings.* FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*

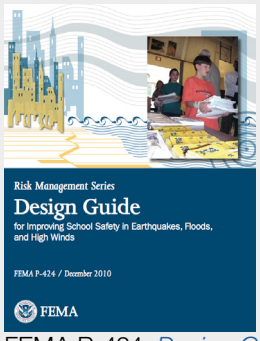
SPACE RISKS	MITIGATION SOLUTION	REFERENCES
Contents	Determine and relocate your critical contents at least one foot above the BFE or the DFE, whichever is higher.	FEMA FEMA P-936, *Floodproofing Non-Residential Buildings.*
Chemicals	Establish a method for safeguarding chemicals in your Preparedness and Mitigation Project Plan.	Ready Business Emergency Response Plan

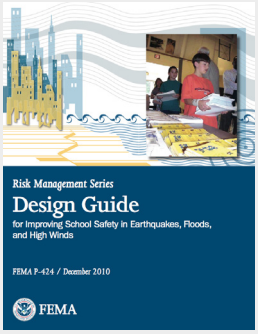
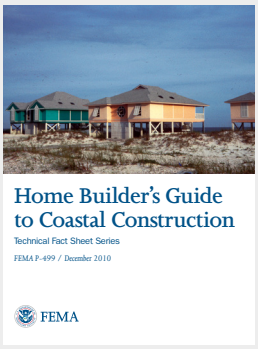
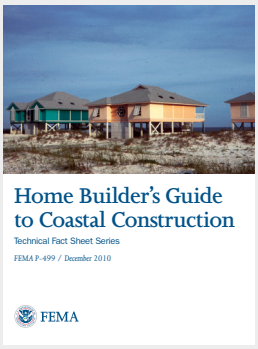
SYSTEMS RISKS	MITIGATION SOLUTION	REFERENCES
Mechanical Systems Fuel Tanks/Systems Electrical Systems Communications Systems Lightning Protection Systems Utility Connections Antenna Other Rooftop Structures Sewer and Water Management Systems Potable Water Systems	Consult a professional engineer to evaluate and design structural connections to resist the expected wind loads and provide uplift resistance. Additionally, consult a professional to evaluate and design for the following flood mitigation techniques: • Elevate service equipment at least 12-inches above BFE. Use platforms or pedestals for equipment installed on the ground. • Relocate equipment to an existing location above the BFE. • Protect the equipment in place with floodwalls, shields, or anchors and tie-downs. Protect drainage systems with backflow valves. Consult a professional plumber for proper installation of these devices.	FEMA FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.* FEMA FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.* FEMA P-936, *Floodproofing Non-Residential Buildings.*

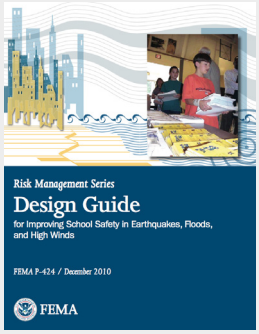
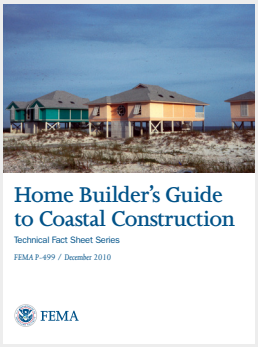
Quick Reference Guide: STRUCTURE

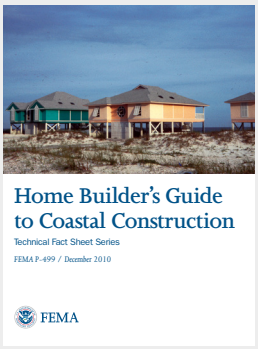
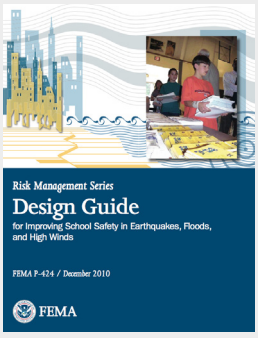
The International Code Council's *International Building Code* (IBC) addresses construction methods for most commercial structures as well as residential structures that are not covered by the International Residential Code. The IBC contains both prescriptive and engineered provisions, and applies to the many different types of commercial structures.

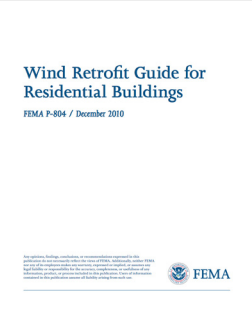
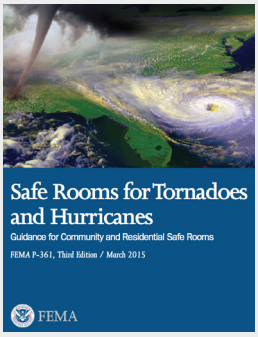
It is important to note that the recommendations in this document are general and are intended to highlight areas of a structure that could be strengthened against hurricanes. However, the recommendations cannot account for all of the different building types and variables in the IBC. As a result, a licensed professional is necessary to identify and perform mitigation activity appropriate for your organization

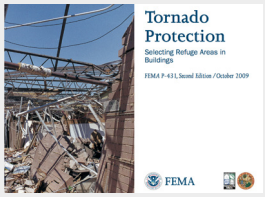
STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Continuous Load Path – Foundation	Consult a professional engineer to evaluate elevation and continuous load path. The entire structure can be bolted to its foundation using anchor bolts along the foundation sill.	 *How to Prepare for a Hurricane.* Prepareathon
Roof Systems	Consult a professional engineer to design the roof to withstand the expected wind loads, provide uplift resistance, and prevent water intrusion. Consider the many features that define a roof, including slope, structure, covering, and attachments, and address the roof as a system. Ensure that the following design/ mitigation measures are included: • Roof-to-Wall Connections • Roof Structure • Roof Decking/Sealant • Roof Covering • Roof Flashing • Vents	 FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.* FEMA *Secure Built-Up and Single-Ply Roofs: Protecting Your Property from High Winds*

STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Skylights	Upgrade to pressure-rated, impact-resistant skylights.	 FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*
Gable-End Bracing	Hire a professional to brace any gable-end walls taller than 4 feet so that loads on the gable-end walls are distributed over multiple roof trusses or rafters.	 FEMA P-499, *Home Builder's Guide to Coastal Construction.*
Soffits	Proper attachment is the most common cause of soffit failures. This can be addressed by installing wood backing or supports as an attachment point for soffits. If it is not possible to install wood supports, the soffit should be secured at 12-inch intervals on each side to limit flexing during high-wind events.	 FEMA P-499, *Home Builder's Guide to Coastal Construction.*

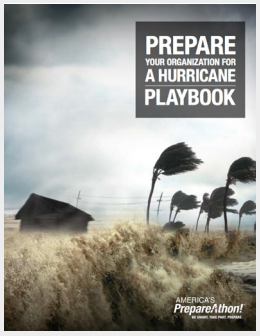
STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Gutters and Downspouts	Install noncombustible systems designed for high-wind speeds that provide uplift resistance.	 FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*
Wall Systems	Consult a professional engineer to design walls to withstand high-wind loads, provide uplift resistance, and prevent water intrusion. Consider the many features that define a wall, including structure, covering, and openings. Address the wall as a system, ensuring the following design/mitigation measures are included: • Wall Structure • Wall Sheathing • House Wrap • Wall Coverings • Flashing Around Openings	 FEMA P-499, *Home Builder's Guide to Coastal Construction.* *Secure Metal Siding and Metal Roofs: Protecting Your Property from High Winds* *Maintain EIFS Walls: Protecting Your Property from High Winds*

STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Openings • Garage/Rolling Doors • Windows • Exterior Doors	• Install pressure-rated, impact-resistant garage doors or brace existing doors with assemblies designed to increase pressure ratings. • Install pressure-rated, impact-resistant windows, or protect with tested and approved opening protection. If these options are not available, as a temporary measure use 5/8-inch or greater plywood, cut to fit and ready to install, and do not use tape, as it does not protect against broken glass. • Install pressure-rated, impact-resistant exterior doors. • Ensure flashing and weather stripping around the windows and doors is designed/installed to protect against water intrusion from wind-driven rain.	FEMA *Reinforce or Replace Garage Doors: Protecting Your Property from High Winds* FEMA *Protect Windows and Doors with Covers: Protecting Your Property from High Winds*  FEMA P-499, *Home Builder's Guide to Coastal Construction.*  FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*

STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Canopies, Awnings, and Carports	Add metal connectors to meet or exceed expected wind loads. For the carport, consider placing connectors: 1. Between supporting roof members and horizontal beams; 2. At each beam-to-column connection; and 3. At each column-to-foundation connection.	 FEMA P-804, *Wind Retrofit Guide for Residential Buildings.*
Safe Room or Shelter	Install a safe room or shelter that is constructed using FEMA guidance or that meets ICC/NSSA 500 standards in an area safe from flooding. Reference FEMA P-361 and *Quick Guide Flood Hazard Elevation and Siting Criteria for Community Safe Rooms* for additional information about flood elevation and siting criteria for community safe rooms. *Note: If the structure is located in a flood zone, safe rooms and shelters are not recommended.*	 FEMA P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms.*  FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business.* *ICC/NSSA 500-2014: Standard for the Design and Construction of Storm Shelters.*

STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Safe Room or Shelter		FEMA *Quick Guide Flood Hazard Elevation and Siting Criteria for Community Safe Rooms*
BARA	Consult a professional engineer to determine your BARA if a tornado shelter is not installed. *Note: Do not plan to shelter-in-place if your structure is in a flood or storm surge evacuation zone.*	 *FEMA P-431, Tornado Protection: Selecting Refuge Areas in Buildings*
Elevation	Consult a professional engineer to evaluate elevating your structure so the lowest floor is at or above the BFE or DFE, whichever is higher.	FEMA FEMA P-550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations* FEMA P-312, *Homeowner's Guide to Retrofitting*
Wet Floodproofing	Wet floodproofing is a technique that allows flood waters to enter the structure. Consult a professional engineer to evaluate options for wet floodproofing the structure. Consider the following items when wet floodproofing: • Wet floodproofing is not typically done in climate controlled areas. • All materials used should be resistant to damage from flood waters. • Wet floodproofing does not protect the structure from flowing water, erosion, scour, debris or damage to contents. • Post-flood clean-up should be considered before using wet floodproofing techniques.	FEMA FEMA P-936, *Floodproofing Non-Residential Buildings* FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*

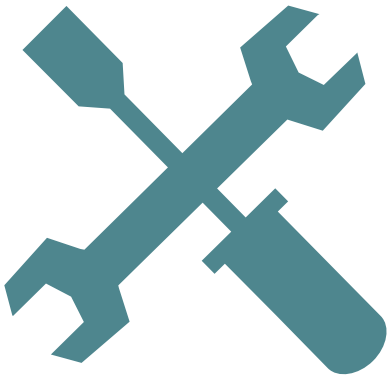
STRUCTURAL RISKS	MITIGATION SOLUTION	REFERENCES
Wet Floodproofing	• Installation of properly sized and placed wall openings, below the expected flood level. By allowing water to enter the structure, you may cause a secondary issue with protection of systems. Reference the SYSTEMS section to mitigate these items.	
Dry Floodproofing	Dry floodproofing is a technique that prevents the entry of water into the structure. Dry floodproofing should only be considered in instances where the flood waters are expected to last a short duration and a depth of less than three feet. *Because the walls are exposed to floodwaters and the pressures they exert, dry floodproofing is recommended only for structures with walls constructed of flood-resistant materials and depths are low.* Consult a professional engineer to evaluate options for dry floodproofing the structure. Consider the following items when dry floodproofing: • All exterior walls of the structure must be sealed and possibly reinforced. • All openings below BFE must be permanently sealed or have enhanced flood shields installed. • Protected from seepage. • Anchoring of structure to resist floatation and lateral movement. • Selecting and designing proper drainage systems to eliminate excess hydrostatic loads. • Design watertight core areas to protect vital systems if dry floodproofing the entire structure is not possible.	FEMA FEMA P-936, *Floodproofing Non-Residential Buildings.* FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*

SERVICE ACTION	MITIGATION SOLUTION	REFERENCES
Contact Your Local Emergency Management Office	Contact your local emergency management office to identify emergency management personnel and resources in your area.	[redacted] *Emergency Management Agencies*
	Contact your local emergency management office during your disaster planning to learn how you may provide service(s) before and after a disaster strikes. Include this information in your Business Continuity Plan.	
Identify Ways to Engage and Participate in Your Community	In addition to preparing your organization, it is important to understand your local and tribal community emergency operation plans and to work with other organizations in your community or tribe. Opportunities to participate in whole community planning include the following: • Learn about public-private partnerships. • Participate in local or tribal organizations that make your community a safer and more prepared place to live and do business, such as your local Citizen Corps Council, hazard mitigation planning team, or local and tribal Community Emergency Response Team (CERT). • Citizen Corps Council includes representatives from all sectors of the community. This whole community membership helps to ensure the community perspective is reflected in local emergency management practices.	 *Prepare Your Organization for a Hurricane Playbook.* Prepareathon CERT COMMUNITY EMERGENCY RESPONSE TEAM

3

Take Action

1. Make sure that your Preparedness and Mitigation Project Plan is approved by the building owner if you are leasing or renting your building. Always check with your local building department to secure required permits prior to performing any retrofitting or other mitigation activity.
2. Perform preparedness and mitigation activities as prioritized in the Preparedness and Mitigation Project Plan. Document your preparedness and mitigation as instructed in the applications for STAFF, SURROUNDINGS, SPACE, SYSTEMS, STRUCTURE, and SERVICE with signatures, photographs, receipts, or letters from an organization manager, engineer, or design professional.



3 | Take Action: Ready Business - STAFF Checklist

Use the following checklists to document actions taken to prepare your staff and organization for hurricane events. Submit these checklists with your application for recognition under *Step Four: Be Recognized and Inspire Others*.

The Suggested Actions are recommended, but not required, for recognition.

PREPAREDNESS ACTIONS	ACCOMPLISHED	INITIAL/DATE OF RESPONSIBLE PERSON
1 Developed Business Continuity and Crisis Communication Plans	Must be completed to receive recognition	
2 Conducted an Employee Awareness Campaign	Must be completed to receive recognition	
3 Developed an Employee Training Program	Must be completed to receive recognition	
4 Conducted an Employee Training Session	Must be completed to receive recognition	
5 Conducted a Hurricane Drill	Must be completed to receive recognition	
6 Reviewed Insurance Coverage (Including Flood Insurance)/Created Inventory	Must be completed to receive recognition	
SUGGESTED ACTION: Developed an Employee Sheltering/Evacuation Plan and Included an Emergency Supply Kit	❑ Yes ❑ No ❑ Not Applicable	
SUGGESTED ACTION: Purchased a NOAA Weather Radio for Monitoring During an Event/Downloaded a Mobile Alerting App	❑ Yes ❑ No ❑ Not Applicable	

3 | Take Action: Ready Business - SURROUNDINGS Checklist

SURROUNDINGS RISKS	MITIGATION SOLUTION	ACCOMPLISHED	INSERT PHOTO OR RECEIPT
Signs	Reinforced signs to withstand expected wind pressures or removed prior to event.	❑ Yes ❑ No ❑ Not Applicable	
Flagpoles	Secured flagpole(s) to withstand expected wind pressures or removed prior to event.	❑ Yes ❑ No ❑ Not Applicable	
Landscaping/Trees	Consulted a professional landscaper and developed a plan for hurricane-resilient landscaping.	❑ Yes ❑ No ❑ Not Applicable	
Fences	Ensured fencing is installed securely.	❑ Yes ❑ No ❑ Not Applicable	
Floodwalls and Levees	Consulted with a floodplain manager or professional engineer regarding land use or code restrictions/requirements in your area. If elevating the structure or performing floodproofing techniques is not feasible, then consider designing floodwalls or levees on the property to attempt to repel floodwaters.	❑ Yes ❑ No ❑ Not Applicable	

SPACE RISKS	MITIGATION SOLUTION	ACCOMPLISHED	INSERT PHOTO OR RECEIPT
Contents	Determined and relocated all critical contents at least one foot above the BFE or DFE, whichever is higher.	❑ Yes ❑ No ❑ Not Applicable	
Chemicals	Established a method for safeguarding chemicals in your Preparedness and Mitigation Project Plan.	❑ Yes ❑ No ❑ Not Applicable	

SYSTEMS RISKS	MITIGATION SOLUTION	ACCOMPLISHED	INSERT PHOTO OR RECEIPT
Mechanical Systems	Consulted a professional engineer or licensed professional trained in each system to ensure all systems and connections are designed to resist the expected wind loads and uplift and to develop solutions for protecting vital systems through elevation anchoring, or other approved means. Consulted a professional engineer to evaluate elivating your structure so the lowest floor is at or above the BFE or DFE, whichever is higher.	❑ Yes ❑ No ❑ Not Applicable	
Fuel Tanks/Systems		❑ Yes ❑ No ❑ Not Applicable	
Electrical Systems		❑ Yes ❑ No ❑ Not Applicable	
Communications Equipment		❑ Yes ❑ No ❑ Not Applicable	
Lightning Protection Systems		❑ Yes ❑ No ❑ Not Applicable	
Utility Connections		❑ Yes ❑ No ❑ Not Applicable	
Antennas		❑ Yes ❑ No ❑ Not Applicable	
Other Rooftop Structures		❑ Yes ❑ No ❑ Not Applicable	
Sewer and Water Management Systems		❑ Yes ❑ No ❑ Not Applicable	
Potable Water Systems		❑ Yes ❑ No ❑ Not Applicable	

STRUCTURAL RISKS	MITIGATION SOLUTION	ACCOMPLISHED	INSERT PHOTO OR RECEIPT
Continuous Load Path - Foundation	Consulted a professional engineer to evaluate elevation and continuous load path.	❑ Yes ❑ No ❑ Not Applicable	
Roof Systems	Consulted a professional engineer and designed the roof to withstand the expected wind loads, uplift, and water intrusion. Created a continuous load path, considered the integrity of roof coverings and decking, and installed flashing to minimize water intrusion through vents or other openings.	❑ Yes ❑ No ❑ Not Applicable	
Skylights	Upgraded to pressure-rated, impact-resistant skylights.	❑ Yes ❑ No ❑ Not Applicable	
Gable-End Bracing	Consulted a professional engineer to properly brace the gable-end walls.	❑ Yes ❑ No ❑ Not Applicable	
Soffits	Consulted a professional to ensure soffits are adequately supported.	❑ Yes ❑ No ❑ Not Applicable	
Gutters and Downspouts	Installed noncombustible systems designed for wind speed and uplift resistance.	❑ Yes ❑ No ❑ Not Applicable	
Wall Systems	Consulted a professional engineer to ensure the wall can withstand expected wind loads, pressure, and resist water intrusion. Created a continuous load path, ensured the integrity of wall coverings and sheathing, and installed adequate flashing to minimize water intrusion.	❑ Yes ❑ No ❑ Not Applicable	

STRUCTURAL RISKS	MITIGATION SOLUTION	ACCOMPLISHED	INSERT PHOTO OR RECEIPT
Openings • Garage/Rolling Doors • Windows • Exterior Doors	Installed pressure-rated, impact-resistant exterior doors, windows, and garage/rolling doors. Installed storm shutters or other tested and approved protection on any unprotected openings.	❑ Yes ❑ No ❑ Not Applicable	
Canopies, Awnings, and Carports	Added support to withstand wind loads and provide uplift resistance.	❑ Yes ❑ No ❑ Not Applicable	
Safe Room or Shelter	Installed a safe room or shelter that meets FEMA Guidelines or ICC/NSSA 500 Standards. *Note: If the structure is located in a flood zone, safe rooms and shelters are not recommended.*	❑ Yes ❑ No ❑ Not Applicable	
BARA	Consulted a professional engineer to determine your BARA if a tornado safe room is not installed. *Note: Do not plan to shelter-in-place if your structure is in a flood or storm surge evacuation zone.*	❑ Yes ❑ No ❑ Not Applicable	
Elevation	Consulted a professional engineer to evaluate elevation of the structure so that the top of the lowest floor is at or above the BFE or DFE, whichever is higher.	❑ Yes ❑ No ❑ Not Applicable	
Wet Floodproofing	A combination of measures that results in a structure, including the attendant utilities and equipment, being watertight with all elements substantially impermiable to the entrance of floodwater and with structural components having the capacity.	❑ Yes ❑ No ❑ Not Applicable	
Dry Floodproofing	The use of flood-damage-resistent materials and construction techniques to minimize flood damage to areas below the flood protection level of a structure, which is intentionally allowed to flood.	❑ Yes ❑ No ❑ Not Applicable	

SERVICE ACTION	SERVICE SOLUTION	INITIAL/DATE OF RESPONSIBLE PERSON
Contacted Your Local Emergency Management Office	These activities are written into your Business Continuity Plan.	
Identified Ways to Engage and Participate in Your Community	These activities are written into your Business Continuity Plan.	
Storm Surge Warning	A Storm Surge Warning is defined as the danger of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours, in association with a tropical, subtropical, or post-tropical cyclone.	
Storm Surge Watch	A Storm Surge Watch is defined as the possibility of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 48 hours, in association with a tropical, subtropical, or post-tropical.	

4

Be Recognized and Inspire Others

Now that you have taken the steps to prepare and mitigate your organization to protect customers and employees, you can gain recognition for your accomplishment by completing the application and submit with the checklists completed from *Take Action* to be recognized as a Ready Business Community Member.

You will receive a Ready Business Community Member recognition certificate, window cling, and web badge to let your customers and staff know that you are a Ready Business and your organization will be added to the list of program participants on the Ready Business website. You will also receive a sample news release that you use to let your community know that you have taken action to prepare.

PLEASE COMPLETE:

Organization Name:

Owner/Manager:

Address:

Phone Number: Fax:

Email:

Organization Website URL:

READY BUSINESS DESIGNATION LEVEL (PLEASE INDICATE EACH LEVEL YOU ARE APPLYING FOR):	
☐ Ready Business - **STAFF**	Must complete steps one through six for STAFF recognition
☐ Ready Business - **SURROUNDINGS**	Must complete all applicable SURROUNDINGS mitigation activities for recognition
☐ Ready Business - **SPACE**	Must complete all applicable SPACE activities for recognition
☐ Ready Business - **SYSTEMS**	Must complete all applicable SYSTEMS activities for recognition
☐ Ready Business - **STRUCTURE**	Must complete one of the applicable STRUCTURE activities for recognition
☐ Ready Business - **SERVICE**	Must complete all applicable SERVICE activities and STAFF, SURROUNDINGS, SPACE, SYSTEMS, and STRUCTURE for recognition

Please include with your application the preparedness actions and mitigation checklists completed with *Step Three: Take Action.*

Feedback

Tell us about yourself and your organization

1. TYPE OF ORGANIZATION?

- ☐ Retail
- ☐ Professional Office
- ☐ Restaurant
- ☐ Service Provider
- ☐ Nonprofit
- ☐ Industrial
- ☐ Daycare Center/School
- ☐ Other, please list

2. HOW MANY PEOPLE DO YOU EMPLOY?

- ☐ 1 - 9
- ☐ 10 - 24
- ☐ 25 - 49
- ☐ 50 - 99
- ☐ 100 - 249
- ☐ 250 - 499
- ☐ 500 or more

3. HOW DID YOU HEAR ABOUT THE *READY BUSINESS PROGRAM*?

- ☐ FEMA
- ☐ FLASH
- ☐ State or local emergency management office
- ☐ Other, please list

4. PLEASE PROVIDE ANY SUGGESTIONS FOR THE *READY BUSINESS PROGRAM*.

Thank you for your participation in the *Ready Business Program*. You will receive a response to your application within two to four weeks.

For more information or if you have questions about the program or application, contact FLASH at (877) 221-7233 or email ReadyBusiness@flash.org. Once you have completed the application(s), please scan and email to ReadyBusiness@flash.org.

For business continuity and preparedness questions, please contact FEMA at FEMA-Private-Sector@fema.dhs.gov.

Signature Print Name Date

Valuable Websites

Prepareathon
https://www.ready.gov/prepare

Federal Alliance of Safe Homes (FLASH)
http://www.flash.org

National Hurricane Center
http://www.nhc.noaa.gov/
https://noaanhc.wordpress.com/

Ready Floods
https://www.ready.gov/floods

Ready Hurricanes
https://www.ready.gov/hurricanes

Ready Business
http://www.ready.gov/business

B	
Backflow Valve	A valve designed to block drain pipes temporarily and prevent return flow.
Base Flood	Flood that has a one percent probability of being equaled or exceeded in any year.
Base Flood Elevations (BFE)	The computed elevation to which floodwater is anticipated to rise during the base flood. BFEs are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles. The BFE is the regulatory requirement for the elevation or floodproofing of structures. The relationship between the BFE and a structure's elevation determines the flood insurance premium.
Best Available Refuge Area (BARA)	An area in an existing building that has been deemed by a registered design professional as likely to protect building occupants during an extreme-wind event better than other areas in the building when a safe room is not available.
C	
Coastal Flooding	Flooding which occurs when water is driven onto land from an adjacent body of water. This generally occurs when there are significant storms, such as tropical and extratropical cyclones.
D	
Debris	Materials carried by floodwaters, including objects of various size and suspended soils.
Design Flood Elevation (DFE)	Elevation of the highest flood, including freeboard, that a retrofitting method is intended to protect against.
Dry Floodproofing	Protecting a building by sealing its exterior walls to prevent the entry of floodwaters.
E	
Elevation	In retrofitting, the process of raising a home or other building so that it is above the height of a given flood.
Evacuation Notice	If the danger is significant, state or local government officials may issue an evacuation notice. Evacuation orders may vary by state and community and range from voluntary to mandatory. When authorities issue a mandatory evacuation notice, leave the area immediately.
Extreme Wind Warning	An extreme wind warning is issued when extreme sustained winds of a major hurricane (115 mph or greater), usually associated with the eyewall, are expected to begin within an hour.

F	
Flash Flood	A flood that rises and falls very quickly, usually characterized by high flow velocities.
Flood	Under the NFIP, "a general and temporary condition of partial or complete inundation of normally dry land areas" from 1) the overland flow of a lake, river, stream, ditch, etc.; 2) the unusual and rapid accumulation of runoff of surface waters; and 3) mudflows or the sudden collapse of shoreline land.
Floodproofing	Structural or nonstructural changes or adjustments included in the design, construction, or alteration of a building that reduce damage to the building and its contents from flooding and erosion.
Floodwall	Flood barrier constructed of manmade materials, such as concrete or masonry.
Freeboard	Additional amount of height included in the DFE to provide a factor of safety.
H	
Hurricane	A hurricane is a tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 74 mph or more. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian.
Hurricane Season	The portion of the year having a relatively high incidence of hurricanes. The hurricane season in the Atlantic, Caribbean, and Gulf of Mexico runs from June 1 to November 30.
Hurricane Warning	A hurricane warning is an announcement that sustained winds of 74 mph or higher are expected somewhere within the specified area in association with a tropical, subtropical, or post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds. The warning can remain in effect when dangerously high water or a combination of dangerously high water and waves continue, even though winds may be less than hurricane force.
Hurricane Watch	A hurricane watch is an announcement that sustained winds of 74 mph or higher are possible within the specified area in association with a tropical, subtropical, or post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical storm force winds.

H	
Hydrostatic Pressure	Force exerted on the walls and uplift (buoyancy) on floors by the floodwaters.
I	
Inland Flooding	Any type of flooding that occurs that is not considered coastal flooding. For example flash floods, riverine floods, aerial flooding, etc.
L	
Levee	Flood barrier constructed of compacted soil.
Lowest Floor	Floor of the lowest enclosed area within the building, including the basement. The only exception is an enclosed area below an elevated building, but only when the enclosed area is used solely for parking, building access, or storage and is compliant with relevant regulations.
M	
Major Hurricane	A major hurricane is a hurricane which reaches Category 3 (sustained winds greater than 110 mph) on the Saffir/Simpson Hurricane Scale.
R	
Retrofitting	Making changes to an existing home or other building to protect it from flooding or other hazards such as high winds and earthquakes.
S	
Saffir-Simpson Hurricane Wind Scale	The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time. The scale provides examples of the type of damage and impacts in the United States associated with winds of the indicated intensity.
Service Equipment	The utility systems, heating and cooling systems, and large appliances in a retrofitted home.
Storm Surge Warning	A Storm Surge Warning is defined as the danger of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours, in association with a tropical, subtropical, or post-tropical cyclone.
Storm Surge Watch	A Storm Surge Watch is defined as the possibility of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 48 hours, in association with a tropical, subtropical, or post-tropical.

T	
Tropical Cyclone	A tropical cyclone is a warm-core non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters, with organized deep convection and a closed surface wind circulation about a well-defined center. Once formed, a tropical cyclone is maintained by the extraction of heat energy from the ocean at high temperature and heat export at the low temperatures of the upper troposphere.
T	
Tropical Depression	A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 38 mph or less.
Tropical Storm	A tropical storm is a tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 39 mph to 73 mph.
Tropical Storm Warning	A tropical storm warning is an announcement that sustained winds of 39 to 73 mph are expected somewhere within the specified area within 36 hours in association with a tropical, subtropical, or post-tropical cyclone.
Tropical Storm Watch	A tropical storm watch is an announcement that sustained winds of 39 to 73 mph are possible within the specified area within 48 hours in association with a tropical, subtropical, or post-tropical cyclone.
W	
Wet Floodproofing	Protecting a building by allowing floodwaters to enter so that internal and external hydrostatic pressure are equalized. Usually, only enclosed areas used for parking, building access, or storage are wet floodproofed.

The following is a list of websites and content referenced in this document.

Page #	Title of Document	Link
inside front cover	NOAA Major Hurricane Map	http://www.nhc.noaa.gov/climo/images/1851_2013_mjrhurr.jpg
3	FEMA. *Business Continuity Plan*	www.fema.gov/media-library/assets/documents/89510
5	Ready Business email	ReadyBusiness@flash.org
15	FloodSmart	www.floodsmart.gov
22	National Voluntary Organizations Active in Disaster	www.nvoad.org/volunteering
23	FEMA. *Business Continuity Plan.*	www.fema.gov/media-library/assets/documents/89510
23	*DRB Toolkit*	www.drbtoolkit.org
23	FEMA. *Business Continuity Plan.*	www.fema.gov/media-library/assets/documents/89510
23	Small Business Administration. *Crisis Communication*.	http://www.agilityrecovery.com/assets/SBA/crisiscomms.pdf
24	FEMA. *How to Prepare for a Hurricane*. Prepareathon	http://www.fema.gov/media-library/assets/documents/98105
24	FEMA Flood Map Service Center.	https://msc.fema.gov/portal
25	FEMA. *Prepare Your Organization for a Hurricane Playbook.* Prepareathon	http://www.fema.gov/media-library/assets/documents/98410
25	*Turn Around, Don't Drown!*	http://tadd.weather.gov/
25	FEMA. *Prepare Your Organization for a Hurricane Playbook.* Prepareathon	http://www.fema.gov/media-library/assets/documents/98410
26	FEMA. *Prepare Your Organization for a Hurricane Playbook.* Prepareathon	http://www.fema.gov/media-library/assets/documents/98410
26	*Insurance Coverage Discussion Form*	http://www.fema.gov/media-library/assets/documents/89528
26	*Emergency Supply List*	http://www.fema.gov/media-library/assets/documents/90354
27	*NOAA Weather Radio All Hazards*	http://www.nws.noaa.gov/nwr/
27	*Be Smart. Take Part. Know Your Alerts and Warnings.*	http://www.community.fema.gov/action/access-alerts-and-warnings
28	FEMA. *Prepare Your Organization for a Hurricane Playbook*. Prepareathon	http://www.fema.gov/media-library/assets/documents/98410
28	FEMA. *How to Prepare for a Hurricane. Prepareathon*	http://www.fema.gov/media-library/assets/documents/98105
29	*Remove Trees and Potential Windborne Missiles: Protecting Your Property from High Winds*	http://www.fema.gov/media-library/assets/documents/13270

The following is a list of websites and content referenced in this document (continued).

Page #	Title of Document	Link
29	FEMA P-936, *Floodproofing Non-Residential Buildings.*	http://www.fema.gov/media-library/assets/documents/34270
29	FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*	http://www.fema.gov/media-library/assets/documents/3001
30	FEMA P-936, *Floodproofing Non-Residential Buildings.*	http://www.fema.gov/media-library/assets/documents/34270
30	*Emergency Response Plan*	https://www.ready.gov/business/implementation/emergency
31	FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*	https://www.fema.gov/media-library/assets/documents/5264
31	FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*	http://www.fema.gov/media-library/assets/documents/3001
31	FEMA P-936, *Floodproofing Non-Residential Buildings.*	http://www.fema.gov/media-library/assets/documents/34270
32	FEMA. *How to Prepare for a Hurricane.* Prepareathon	http://www.fema.gov/media-library/assets/documents/98105
32	FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*	https://www.fema.gov/media-library/assets/documents/5264
32	*Secure Built-Up and Single-Ply Roofs: Protecting Your Property from High Winds*	https://www.fema.gov/media-library/assets/documents/13270
33	FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Flood, and High Winds.*	https://www.fema.gov/media-library/assets/documents/5264
33	FEMA P-499, *Home Builder's Guide to Coastal Construction.*	http://www.fema.gov/media-library/assets/documents/6131
33	FEMA P-499, *Home Builder's Guide to Coastal Construction.*	http://www.fema.gov/media-library/assets/documents/6131
34	FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Flood, and High Winds.*	https://www.fema.gov/media-library/assets/documents/5264
34	FEMA P-499, *Home Builder's Guide to Coastal Construction.*	http://www.fema.gov/media-library/assets/documents/6131
34	*Secure Metal Siding and Metal Roofs: Protecting Your Property from High Winds*	https://www.fema.gov/media-library/assets/documents/13270
34	*Maintain EIFS Walls: Protecting Your Property from High Winds*	https://www.fema.gov/media-library/assets/documents/13270
35	*Reinforce or Replace Garage Doors: Protecting Your Property from High Winds*	https://www.fema.gov/media-library/assets/documents/13270

The following is a list of websites and content referenced in this document (continued).

#	Title of Document	Link
35	*Protect Windows and Doors with Covers: Protecting Your Property from High Winds*	https://www.fema.gov/media-library/assets/documents/13270
35	FEMA P-499, *Home Builder's Guide to Coastal Construction.*	http://www.fema.gov/media-library/assets/documents/6131
35	FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds.*	https://www.fema.gov/media-library/assets/documents/5264
36	FEMA P-804, *Wind Retrofit Guide for Residential Buildings.*	https://www.fema.gov/media-library/assets/documents/21082
36	FEMA P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms.*	https://www.fema.gov/media-library/assets/documents/3140
36	FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business.*	https://www.fema.gov/fema-p-320-taking-shelter-storm-building-safe-room-your-home-or-small-business
36	ICC/NSSA 500-2014: *Standard for the Design and Construction of Storm Shelters.*	http://shop.iccsafe.org/icc-500-2014-icc-nssa-standard-for-the-design-and-construction-of-storm-shelters-1.html
37	*Quick Guide Flood Hazard Elevation and Siting Criteria for Community Safe Rooms*	http://www.fema.gov/media-library/assets/documents/101965
37	FEMA P-431, *Tornado Protection: Selecting Refuge Area in Buildings*	https://www.fema.gov/media-library/assets/documents/2246
37	FEMA P-550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations*	http://www.fema.gov/es/media-library/assets/documents/3972
37	FEMA P-312, *Homeowner's Guide to Retrofitting.*	http://www.fema.gov/media-library/assets/documents/480
37	FEMA P-936, *Floodproofing Non-Residential Buildings.*	http://www.fema.gov/media-library/assets/documents/34270
37	FEMA P-259, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures.*	http://www.fema.gov/media-library/assets/documents/3001
38	FEMA P-936, *Floodproofing Non-Residential Buildings.*	http://www.fema.gov/media-library/assets/documents/34270
38	FEMA P-259, *Engineering Principles and Practices of Retrofitting Flood-Prone Residential Structures.*	http://www.fema.gov/media-library/assets/documents/3001
39	*Emergency Management Agencies*	http://www.fema.gov/emergency-management-agencies
39	FEMA. *Prepare Your Organization for a Hurricane Playbook.* Prepareathon	http://www.fema.gov/media-library/assets/documents/98410

The following is a list of websites and content referenced in this document (continued).

#	Title of Document	Link
49	Ready Business	ReadyBusiness@flash.org
49	FEMA Private Sector Division Email	FEMA-Private-Sector@fema.dhs.gov
50	Prepareathon	https://ready.gov/prepare
50	FLASH	http://www.flash.org
50	National Hurricane Center	http://www.nhc.noaa.gov/ https://noaanhc.wordpress.com/
50	Ready Floods	https://www.ready.gov/floods
50	Ready Hurricanes	https://www.ready.gov/hurricanes
50	Ready Business	https://www.ready.gov/business
51	FEMA. *Install Sewer Backflow Valves*	http://www.fema.gov/media-library-data/20130726-1627-20490-2015/how2007_sewer_4_11.pdf
51	National Weather Service. Glossary	http://www.nws.noaa.gov/glossary/
52	National Weather Service. Glossary	http://www.nws.noaa.gov/glossary/
53	National Weather Service. Glossary	http://www.nws.noaa.gov/glossary/
54	National Weather Service. Glossary	http://www.nws.noaa.gov/glossary/