

Hurricane Plan

Introduction

The Brown University Hurricane Plan is written to provide planning information and procedures prior to a hurricane event. It is designed to work in conjunction with the Emergency Management & Preparedness Plan for incident response, and the Emergency Action Plan for evacuation and shelter-in-place procedures. The primary objectives of the plan are as follows:

- Safety and security of students, faculty, staff and visitors
- Mitigation of damages caused by the storm
- Restoration of business and academic operations as quickly as possible

We strongly urge all students, faculty and staff to take this plan and the threat of a hurricane strike to our campus and community very seriously.

The Emergency Management & Preparedness Plan is an element of the University's overall preparedness strategy of identifying, assessing and managing those risks that could threaten to disrupt Brown's mission of education and research, or impact its students, faculty or employees. The Emergency Management & Preparedness Plan focuses on the first 72 hours following an incident which requires a University level response.

Rhode Island's History of Hurricane Preparedness

Before 1960, Providence suffered great losses from tidal flooding. On September 21, 1938, a hurricane hit the Rhode Island coast and created over \$300 million in damages (over \$4 billion in 2008 dollars) and claimed 600 lives. The damage in Providence alone is estimated at \$120 million. It was a Category 3 storm when it came ashore with wind gusts as high as 180 mph. Amazingly, only 3.1 inches of rain had fallen in the City of Providence. On the Brown campus a dozen trees were felled, the roof blew off the swimming pool while freshmen were taking their mandatory swim test, the statue of Caesar Augustus lost his arm and the flagpole was toppled.

On August 31, 1954, Hurricane Carol struck Rhode Island and downtown Providence. The storm brought wind gusts of over 100 miles per hour, and caused over 8 feet of flooding in downtown Providence totaling about \$41 million in damages.

Hurricane Bob struck Rhode Island in August of 1991 and had wind gusts of 125 mph. Trees were downed in much of the state and many were without power for days.

Since 1960, there has not been any significant flooding in the area of downtown Providence due in large part to the construction of the Fox Point Hurricane Barrier. The Hurricane Barrier construction began in 1960 and was completed in 1966 at a cost of \$16 million and was the first structure of its type to be approved for construction in the United States.

The Hurricane Barrier serves two central functions – to retard high tides from potential storm surges in Narragansett Bay and to maintain river flow such that water levels do not get too high behind the barrier

in downtown Providence. The Hurricane Barrier does not protect the main campus nor Tockwotten area buildings, but does protect 70 Ship Street and other University owned and leased space in the knowledge district and downtown. Some interesting details about the Hurricane Barrier include:

- The Hurricane Barrier provides protection against storms that produce water up to 20 feet above sea level in the downtown area.
- The five pumps have a capacity of 3,150,000 gallons per minute to maintain the level of the river behind the barrier.
- The Hurricane Barrier, when its river and road gates are closed, forms a half mile 25 foot high barrier from Allens Avenue to India Point Park.
- If the Hurricane Barrier was in place during the 1938 and 1954 hurricanes, it would likely have prevented about \$80 million in damages (1960's dollars).
- The Barrier proved its' worth in September, 1985 when hurricane Gloria struck this area. Without the barrier in place, downtown Providence would have been under at least two feet of water and caused millions of dollars in damage.

Definitions

Hurricane – An intense tropical weather system with a well-defined circulation and sustained wind speed exceeding 74 mph. These winds blow in a counterclockwise spiral around a relatively calm center known as the eye of the hurricane. Hurricanes are storms that develop in the northern hemisphere (in the western Pacific they are called typhoons; south of the equator and in the Indian Ocean they are called cyclones).

Hurricane Alert (advisory) – Notification by the National Weather Service issued when hurricane force winds are imminent.

Hurricane Season – June 1 through November 30

Hurricane Shelters – Areas of refuge to be used in the event of a hurricane should be a substantial building with limited glass. Refer to Red Cross and FEMA guidelines for details.

Hurricane Warning - Notification by the National Weather Service, normally 36 hours before the storm is expected to strike; Final actions for protection of life and property should be completed before high winds and heavy rains arrive. 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. 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 – The first notifications issued by the National Weather Service that a hurricane is a definite threat to a geographic region of the United States normally at least 48 hours prior to an expected strike. Landfall is uncertain and broad geographic areas are alerted. In vulnerable areas, actions to protect life and property should begin. 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.

Storm Surge – A dome of water pushed on shore with the hurricane that may cause flooding up to 20 feet above normal sea level along major stretches of coastline where the hurricane makes landfall. It is one of the greatest hazards associated with hurricanes and causes nine out of 10 hurricane-related fatalities.

Tropical Depression – An organized, tropical, low-pressure system with sustained winds less than 39 mph.

Tropical Storm – An organized, tropical low-pressure system with a defined circulation and sustained wind speed between 39 and 73 mph.

Tropical Storm Warning: 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: 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.

Tropical Wave or Disturbance – A cluster of clouds and/or thunderstorms without any organized circulation.

Developing a Family Action Plan

It is essential to University operations that families of the Brown community are properly prepared for hurricanes. This is particularly important for essential staff. One of the most important steps in preparing for a hurricane is to have a Family Action Plan in place before a storm strikes. A Family Action Plan can keep the family safe and out of harm's way in a severe weather event. Once the family develops and finalizes the action plan, be sure to review at least annually and practice it frequently. Additional information that can be useful in developing a Family Action Plan is located in Appendix A of this plan.

University Buildings

Facilities Management will identify which large assembly type buildings may be used as shelters during hurricanes, tornadoes, or other high wind events. FEMA has developed a document titled FEMA 361 - Design and Construction Guidance for Community Shelters which can be used to help with building assessments.

Buildings that should not be used as shelters during hurricanes, tornadoes or other high winds include:

- Research laboratory buildings
- Buildings of primarily wood construction
- Buildings with large amounts of windows
- High rise buildings (or similar)
 - Science Library
 - 121 South Main Street
 - Barus & Holley
- Buildings protected by the hurricane barrier
 - 121 South Main Street
 - 70 Ship Street
 - 110 Elm Street
 - 339 & 349 Eddy Street
 - 196, 222 & 233 Richmond Street
 - 1, 3 & 10 Davol Square
 - 198 Dyer Street
 - 60 Clifford Street
- Buildings in the 100 year floodplain.
 - Marston Boathouse
 - 271 Tockwotten Street

The Department of Facilities Management completed a study of all Residence Halls in 2007 to determine suitability for use during high wind events including hurricanes. Consulting Engineers used FEMA document 361 – ‘Design and Construction Guidance for Community Shelters’ to determine which buildings will remain open for student shelter during a hurricane and which buildings would be closed as a hurricane approaches the campus. Specific arrangements will be communicated to students by the Office of Residential Life or Student Life at least 36 hours prior to landfall.

Hurricane – General Information and Categories

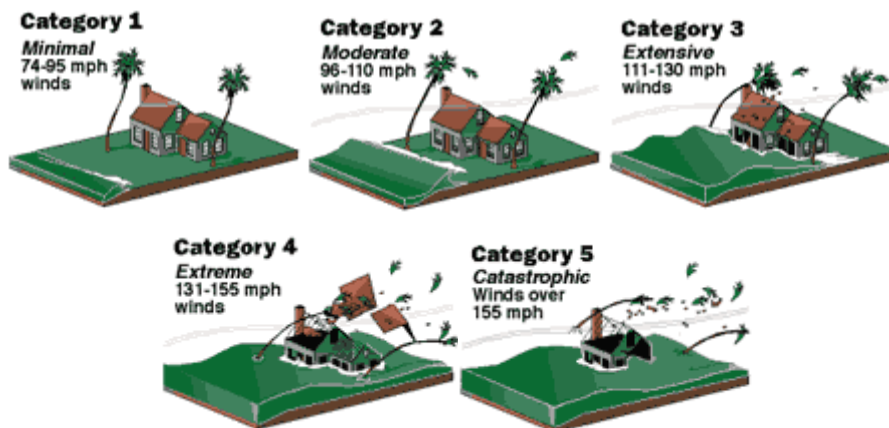
A hurricane is an intense tropical weather system with a well-defined circulation and sustained wind speed exceeding 74 mph. These winds blow in a counterclockwise spiral around a relatively calm center known as the eye of the hurricane. Around the rim of the eye, winds may gust to more than 200 miles per hour.

According to experts at NOAA, your experience during a hurricane will depend on which side of the hurricane’s eye you are located. For example, if you are located on the north or west side of the eye, you are most likely to experience heavy rains which can cause localized flooding. You are most likely to experience the strongest winds and storm surge if you are located on the south or east side of the eye.

There are 5 categories of hurricanes. Storms are classified using the Saffir-Simpson storm strength scale. They are characterized by their sustained winds with category 1 being the least severe and category 5 being the most significant:

- Category 1 - Minimal winds 74 - 95 mph; Storm surge of 4-5 feet
- Category 2 - Moderate winds 96 - 110 mph; Storm surge of 6-8 feet
- Category 3 - Extensive winds 111 - 130 mph; Storm surge of 9-12 feet
- Category 4 - Extreme winds 131 - 155 mph; Storm surge of 13-18 feet
- Category 5 - Catastrophic winds > 155 mph; Storm surge over 18 feet

The following is a pictorial diagram showing the strength of the 5 categories of hurricanes:



Hurricane Preparedness

Brown University has established emergency plans including an overall Emergency Management & Preparedness Plan, an Emergency Action Plan for building evacuation and shelter-in-place, and other area specific plans to prepare for and respond to emergencies. This Hurricane Preparedness Plan has been developed to work in conjunction with the Emergency Management & Preparedness Plan and other emergency plans, with specific procedures that are necessary when a Hurricane Watch or Warning has been declared by the National Weather Service.

Suspension of Service - All instructions such as canceling classes, closing of buildings, releasing of employees, special instructions and the relocation of students will be done by email or phone by the appropriate authorized University official.

Students in University residence halls should notify the Office of Student Life if they plan to evacuate from campus. This notification will help with accountability and necessary planning.

The University will monitor hurricanes with a predictable path that will likely impact Rhode Island. The following designated actions will be taken at the following time intervals.

72 Hours before Hurricane Landfall

- Core Crisis Team may be activated to review current conditions and discuss general plans and readiness.
- Review Hurricane Preparedness Plan, Emergency Action Plan, and other emergency plans.
- Begin frequent monitoring of weather related media sources including but not limited to the National Weather Service, NOAA, FEMA, and PEMA.
- Consider available supplies of food, water and fuel should shelter-in-place procedures be required.
- Check grounds and remove dead limbs, prop weakly rooted trees, clean up loose debris, and begin moving all loose equipment and materials.
- Make sure Brown Public Safety, Facilities Management, Dining Services and others have current telephone numbers for support responders such as water suppliers, emergency generator suppliers, fuel suppliers, food suppliers, and others as needed.
- Dining Services will review inventory and ensure it can provide food and water for all students and essential staff for at least a 72 hour duration.

48 Hours before Hurricane Landfall

- Core Crisis Team reviews current conditions and recommends actions to the Crisis Management Policy Committee. A decision to delay or cancel scheduled classes or academic functions will be made by the Provost. A decision to delay or cancel the opening of administrative offices and functions will be made by the EVP for Finance and Administration. Staff responsible for sustaining critical functions have been identified in advance and are prepared to ensure those functions are operating.
- Facilities Management initiates procedures to protect buildings located in the 100 year flood plain including Marston Boathouse and 271 Tockwotten Street. Procedures may include providing sandbags, raising items above ground level and securing the buildings. These buildings may experience worst case flood waters of between 3.5 and 6 feet as the Seekonk River peaks at 16.5 feet (Mean Sea Level).
- Athletics will begin preparations at the Marston Boathouse including moving items to the second floor of building and other preparations.
- Dining Services will ensure their ability to feed students and essential staff.

- Libraries and Museums begin preparation for priority collections and exhibits.
- Backup of student records, library catalogs, alumni records and other relevant data should occur at this stage.
- Departments should review and communicate their Continuity Plan with their group.
- The University's Employee Emergency Information Line (401-863-3111) and University Homepage (www.brown.edu) should begin to provide information and emails will be sent.
- Ensure that athletic equipment, outdoor research equipment, trash and recycling receptacles, benches, and all other loose items that may become projectiles in high winds are appropriately secured.
- Ensure that contractors working on campus secure all equipment and materials from their site which may become projectiles in high winds.
- Make sure all storm drains are clear.
- Make sure all essential vehicles are fully fueled, stocked and inspected. These include but are not limited to Facilities Management, Public Safety, Athletics and EMS.
- Turn off unnecessary lighting and appliances, secure windows, doors, and shutters, locking when appropriate.
- Make sure all storm response equipment is inspected and ready for operation. This includes but is not limited to chainsaws, blowers, water pumps, tractors, portable generators.

36 Hours before Hurricane Landfall or 750 miles as noted on Hurricane tracking map

- The Provost and EVP of Finance & Administration will notify the Cabinet, Senior Staff, and the Core Crisis Management team of a decision regarding administrative and academic functions, which may include the evacuation of all non-essential faculty and staff and prepare to initiate shelter-in-place procedures.
- Core Crisis Team and appropriate staff begin implementation of evacuation and shelter-in-place procedures as needed depending on conditions and warnings.
- All University related functions may be cancelled including classes, sporting events, lectures, and other functions if warranted given conditions and warnings.
- Student Life begins notification to students regarding evacuation procedures. Shelter-in-place locations and other details should be arranged and/or coordinated.
- Human Resources and University Communications update the University's Employee Emergency Information Line (401-863-3111) and the University Homepage (www.brown.edu) respectively and notify the appropriate media of University plans and closings.
- University departments initiate any specific departmental shut down procedures and begin evacuation of faculty and staff.
 - Departments should back up computer data at this time by following University guidelines. For essential data that may be necessary during or immediately after the storm, contact Computer and Information Services (863-HELP) for specific recommendations.
 - Unplug all office equipment including computers, and store off the floor.
 - Protect books, valuables and equipment by covering with plastic sheeting.
 - Close windows, lower all blinds/shades, close slats and draw curtains.
 - Remove personal items that may become damaged since they are not covered by University Insurance.

- Research staff should begin preparations of laboratory facilities by completing experiments, backing up computer data, storing materials and securing rooms and equipment.
- Animal Care staff will assess the needs of the animals and prepare for limited staffing until the storm has passed.
- Close non-essential offices and departments at this time.
- Facilities Management hurricane procedures
 - All essential personnel report to supervisors for team assignments
 - Director of Operations should obtain a block of Purchase Order numbers or initiate other process to ensure that services of outside contractors can begin immediately after storm. Facilities will track all work and reconcile with Purchasing when that office resumes business.
 - Make final checks of roofs for loose debris and clear floor drains.
 - Open air vents leading to roofs to equalize pressure during storm.
 - Consider taping of windows adjacent to shelter-in-place locations to prevent personal injury from shattered glass. Consider boarding of windows for more vulnerable buildings depending on conditions and the directional approach of the storm. Vice President for Facilities Management will decide.
 - Issue plastic sheeting and other protective materials as deemed appropriate.
- Public Safety hurricane procedures
 - Public Safety personnel report to Colonel or Deputy Chief for assignments.
 - Begin inspection of campus and help with evacuation of non-essential personnel.
 - Secure unoccupied buildings if building evacuation occurs.
 - Check status of the Daycare Center on campus.
- Brown School of Professional Studies reviews status of programs
 - Review plans and consider changing plans or cancelling programs as needed.
- Student hurricane preparation procedures
 - Off-campus students should prepare some snack items and water as part of their preparations. FEMA recommends one gallon per person per day for drinking and other uses.
 - Dining Services will have food and water at the dining halls for students and essential staff. Students should consider keeping several gallons of water per person available for emergencies.
 - Students who have access to bathtubs should clean the tub and fill it halfway with water. If the water supply is cut off, the water in the tub may be used for flushing toilets or for washing. Do not drink this water.
 - Each student should provide his or her own flashlight to be used during a power failure. Do not use candles or other flame type lighting under any circumstances. Fire can be uncontrollable during a hurricane due to high winds and limited access for emergency vehicles.
 - Students who have cars on campus should set the emergency brake, close all windows and leave vehicle in the designated parking area until after the storm.
 - When emergency shelter is provided, students should bring the following items to their temporary assigned living area:
 - Bedding and pillow
 - One small bag with clothing, etc.
 - Needed medications, glasses, etc.
 - Non-perishable food items

- Small toiletry bag
- Flashlight
- No smoking, drugs or alcohol will be allowed in shelter

24 Hours before Hurricane Landfall or 500 miles as noted on Hurricane tracking map

- Evacuate buildings located in the floodplain including Marston Boathouse and the Tockwotten Street building. Consider the shut down of utilities in these buildings.
- Facilities Management considers particular operational issues for the Central Heat Plant, which will depend on storm specific information and other information.
- Facilities Management refuels all vehicles and continues securing equipment, assessing buildings, and protecting properties from storm conditions, including rooftops.
- Public Safety helps verify that all non-essential personnel have evacuated the campus and unoccupied buildings have been secured.
- Student Life may communicate with students that they should plan to stay on campus if they have not already left, and report to designated shelters on campus only.

12 Hours before Hurricane Landfall

- Turn off and isolate computer equipment.
- Avoid using the phone, except for emergencies.
- Turn up refrigerator thermostat to its coldest setting and keep door closed.
- Be prepared to seek shelter in an interior room on the lowest level of the building that is accessible.

During Hurricane Landfall

- It is essential that all remaining residents stay indoors throughout the entire hurricane. During the storm, for maximum protection, residents should remain in the hallways. If you are not familiar with a hurricane, there is always a lull in the storm when the eye passes through the area. Once the eye passes through, the storm begins again, but from the opposite direction. STAY INDOORS.
- Residents should follow the instructions of University officials including Brown Public Safety, Student/Residential Life or from the Providence Fire Department.
- In the event of power failure during the height of a hurricane, there will be no elevator service. Do not attempt to travel between floors using elevators. First Aid and/or food service will be made available whenever the storm passes or power is restored. Do not use candles during power outages due to the increased fire hazard.
- Do not attempt to open windows or doors to see what is happening outside.
- Report all accidents, injuries, broken windows, or excessive water to the Brown Public Safety at 863-4111 or Facilities Management Service Response at 863-7800.
- Telephone calls should be made only in case of an emergency since non-emergency calls can overload the phone systems.
- Remember that the calm 'eye' of the hurricane is deceptive - the storm is not over.

After The Storm

Following the lifting of the hurricane warning status, essential staff in Facilities Management and Public Safety will assess and advise the Core Crisis Team which buildings and facilities can be used safely for classes and other purposes. Recommendations for repair work or building closings will also be made.

The Provost and EVP of Finance & Administration, upon recommendations from the Core Crisis Team and the Vice President for Facilities Management, will issue necessary directives and instructions concerning the resumption of classes and the use of University buildings and facilities.

The timeline for recovery after a hurricane will vary depending on the severity of storm damage and other factors.

Facilities Management and Public Safety will include the following as priorities following the storm:

- Assist Providence Public Works in clearing roads to allow the movement of Emergency Vehicles including Police, Fire and EMS.
- Ensure access to Health Services, Emergency Shelters, and Emergency Operations Centers.
- Stage water pickups, and prepare emergency supplies for rapid distribution.
- Check roof drains to ensure that none are clogged once wind conditions permit.
- Inspect roofs, doors and exteriors of buildings for security and loose material.
- Secure campus buildings from unauthorized access and looting.

The Office of Student Life will assist with relocating students back to residence halls. Deans will be available to support students during the process of reopening the university.

In situations of University closure, the following communication mechanisms will be used to communicate with faculty, staff and students:

- The Brown Emergency Announcements Page (which will be accessible from the Brown home page during an emergency) <http://www.brown.edu/web/emergency/> and the Employee Emergency Information phone line (401-863-3111) provide official information when the University is under a severe weather emergency.
- The University may communicate with students, faculty and staff via their Brown email addresses. Brown email can be accessed with the appropriate user ID and password by visiting <http://gmail.brown.edu>
- The University may communicate with students, faculty and staff via Brown Alert which can send text messages, email or voice messages. To provide or update your personal information in Brown Alert:
 - Students: enter your cell phone number in Banner at the following URL: <https://selfservice.brown.edu/>
 - Faculty and staff: enter your cell phone number in Workday at the following URL: <http://www.brown.edu/about/administration/workday/workday-log>
- Radio announcements - 92.3 FM, 105.1 FM, 630 AM, 1480 AM, 1400 AM
- Television announcements - Channel 10 WJAR

All employees must check in with their supervisor within a reasonable amount of time following the storm. Employees will be required to report for duty as soon as is practical after they are requested to. During the period of recovery, employees will be expected to perform duties as requested by their supervisor. Some of these duties may not be part of their regular job descriptions.

Faculty and staff should provide updated cellular telephone numbers and alternative (non-Brown) email addresses to their supervisors. They may be used in situations where Brown email addresses become inoperable.



For additional information, or to review Brown University Policies and Procedures, refer to the following Brown University websites or call the listed phone numbers. The Brown University Emergency Preparedness website provides additional useful information and links and can be accessed at http://brown.edu/Administration/EHS/emergency_preparedness/

Brown Resources

Brown University Homepage

<http://www.brown.edu/>

Brown University Emergency Preparedness - BrownReady

http://www.brown.edu/Administration/EHS/emergency_preparedness/

Department of Facilities Management – 863-7800

http://www.brown.edu/Facilities/Facilities_Management/

Department of Public Safety – 863-3322 (863-4111 for Emergencies)

http://www.brown.edu/Administration/Public_Safety/

Office of Student Life – 863-3145

http://www.brown.edu/Student_Services/Office_of_Student_Life/

Office of Environmental Health & Safety – 863-3353

<http://www.brown.edu/Administration/EHS/>

Faculty & Staff Emergency Information Number (message) 863-3111

Student & Family Emergency Information Number (message) 1-877-391-8825

Other Resources

Rhode Island Emergency Management Agency (RIEMA) Hurricane Preparedness

<http://www.riema.ri.gov/resources/citizens/prepare/threats/documents/Hurricane%20Preparedness.pdf>

<http://www.riema.ri.gov/>

Providence Emergency Management Agency (PEMA)

<http://www.readyprov.com/>

<http://www.providenceri.com/PEMA/hurricane-barrier-cam>

American Red Cross

<http://www.redcross.org/>

<http://www.redcross.org/www-files/Documents/pdf/Preparedness/checklists/Hurricane.pdf>

FEMA Hurricane Hazards

<http://www.ready.gov/hurricanes>

National Oceanic and Atmospheric Administration Rhode Island Weather Alert

<http://alerts.weather.gov/cap/ri.php?x=1>

National Weather Service

Environmental Health & Safety

Revised: September 2015

Hurricane Plan 10-16



<http://www.nws.noaa.gov/>

National Oceanic & Atmospheric Administration (NOAA) Homepage

<http://www.noaa.gov/>

National Hurricane Center – NOAA

<http://www.nhc.noaa.gov/>

Intellicast

<http://www.intellicast.com/>

U.S. Department of Labor (OSHA) Hurricane Recovery Information

http://www.osha.gov/OshDoc/data_Hurricane_Facts/faq_storms.html

APPENDIX A

Family Preparedness

Family Preparedness

Hurricanes

Scientists can now predict hurricanes, but people who live along the Eastern United States should plan on how to be prepared for a hurricane or tropical storm. Familiarize yourself with the terms that are used to identify a hurricane:

- A *hurricane watch* means a hurricane is possible in your area. Be prepared to evacuate. Monitor local radio and television news outlets or listen to NOAA Weather Radio for the latest developments.
- A *hurricane warning* is when a hurricane is expected in your area. If local authorities advise you to evacuate, leave immediately.
- Hurricanes are classified into five categories based on their wind speed, central pressure, and damage potential. Category Three and higher hurricanes are considered major hurricanes, though Categories One and Two are still extremely dangerous and warrant your full attention.

Flooding is likely to occur during or after a hurricane. It's important to be prepared for flooding no matter where you live, but particularly if you are in a low-lying area. Even a very small stream or dry creek bed can overflow and create flooding. Familiarize yourself with these terms to help identify a flood hazard:

- A flood warning means that flooding is occurring or will occur soon; if advised to evacuate, do so immediately.
- A flash flood warning means that a flash flood is occurring; seek higher ground on foot immediately.

Find out if your home is at risk for flood by visiting <http://www.floodsmart.gov>. Property insurance does not typically cover flood damage. Talk to your insurance provider about your policy and consider if you need additional coverage.

Family Preparedness

Talk with your family about potential disasters and why it's necessary to prepare for them. Involve each member of your family in the planning process. By showing them simple steps that can increase their safety, you can help reduce their anxiety about emergencies, and help them be better prepared.

- Discuss the type of hazards that could affect the family. Know the home's vulnerability to storm surge, flooding, wind and tornadoes.
- Make sure everyone knows where to find your emergency supply kit and Go-Bags.
- Practice your evacuation from your home. Plan where to meet after a disaster if your home becomes unsafe. Choose two places, one just outside your home and one outside your neighborhood in case you are told to evacuate.
- Determine if the home is located in a storm surge evacuation zone. If so, know exactly where to go to reach safe shelter, and know how to get there. If you are not sure contact your local emergency manager or fire department.
- Locate a safe room or the safest areas in the home for each storm hazard. Sometimes the safest areas may not be in the home, but within the community at a designated shelter.
- Make sure each member knows who your family's out-of-state contact is and instruct them to call this person and tell him/her where they are. Consider adding these numbers to family cell phones or making a wallet card list.
- Teach each member of your family how to use a fire extinguisher.

- Have a flashlight near everyone's bed.
- Be sure your oil or propane tank is always at least half full before a storm event.
- Take into account the special needs of pets, children, seniors, people with disabilities and/or family members that don't speak English.
- Review insurance coverage as flood damage is not usually covered by homeowners insurance.
- Take First Aid, CPR and disaster preparedness classes.
- Monitor NOAA weather radio for official, real-time weather information. We recommend having a National Weather Service NOAA Weather Radio (NWR) available. The RI NWR frequency is 162.400 megahertz (MHz).

Around the House

Here are a few helpful things to do around the house to prepare for hurricanes.

- Plan to bring in all outdoor furniture, gas grill, decorations, garbage cans and anything else that is not tied down.
- Keep all trees and shrubs well trimmed so they are more wind resistant.
- Secure your home by closing shutters, and securing outdoor objects or bringing them inside.
- Turn off utilities if instructed by emergency officials.
- Turn the refrigerator thermostat to its coldest setting and keep its doors closed.
- Turn off propane tanks.
- Elevate your furnace, water heater and electric panel in your home if you live in an area that has a high flood risk.
- Ensure a supply of water for sanitary purposes such as cleaning and flushing toilets. Fill the bathtub and other large containers with water.
- Keep fire extinguishers on hand, and make sure everyone in your house knows how to use them.
- Install carbon monoxide detectors throughout your home. This is especially important if you are planning to use a generator.
- Consider covering all of your home's windows with pre-cut ply wood or hurricane shutters to protect your windows from high winds, especially if you live along the coastline.
- Know ahead of time what you should do to help elderly or disabled friends or neighbors.

Build an Emergency Supply Kit & Go-Bag

After a major disaster the usual services we take for granted, such as running water, refrigeration, and telephones, may be unavailable. Experts recommend that you should be prepared to be self-sufficient for at least three days. Store your household Emergency Supply Kit in an easily accessible location. Put contents in a large, watertight container (e.g. a large plastic garbage can with a lid and wheels) that you can move easily.

A component of your Emergency Supply Kit is a Go-Bag. Put the following items together in a backpack or another easy to carry container in case you must evacuate quickly. Prepare one Go-Bag for each family member and make sure each has an I.D. tag. You may not be at home when an emergency strikes so keep some additional supplies in your car and at work, considering what you would need for your immediate safety.

Your Emergency Supply Kit should include:

- Water – one gallon per person per day
- Food – ready to eat and/or requiring minimal water to prepare
- Manual can opener and other cooking supplies

- Plates, utensils and other feeding supplies
- First Aid kit & instructions
- A copy of important documents & phone numbers
- Warm clothes and rain gear for each family member
- Disposable camera
- Personal hygiene items including toilet paper, feminine supplies, hand sanitizer and soap
- Blanket or sleeping bag
- Large heavy duty plastic bags and a plastic bucket for waste and sanitation
- Unscented liquid household bleach and an eyedropper for water purification
- Heavy work gloves
- Plastic sheeting, duct tape and utility knife for covering broken windows
- Tools such as a crowbar, hammer & nails, staple gun, adjustable wrench and bungee cords
- Any special-needs items for pets, children, seniors or people with disabilities

Your Go-Bag should include:

- Flashlight – with extra batteries
- Radio – battery operated with extra batteries, preferably one with a weather channel feature
- Pocket knife
- Whistle
- Dust masks (preferably one rated as “N-95”)
- Emergency cash in small denominations
- Sturdy shoes, a change of clothes, and a warm hat
- Local map
- Some non-perishable water and food
- Permanent marker, paper and tape
- Photos of family members and pets for re-identification purposes
- List of emergency point-of-contact phone numbers
- List of allergies to any drug (especially antibiotics) or food
- Copy of health insurance and identification cards
- Extra prescription eye glasses, hearing aid or other vital personal items
- Prescription medications and first aid supplies
- Toothbrush and toothpaste
- Extra keys to your house and vehicle
- Any special-needs items for pets, children, seniors or people with disabilities

If Flooding Occurs

During a hurricane flooding may occur during and after the storm. The following are a few tips to remember if you are likely to encounter flooding.

- If flooding is likely, and time permits, move valuable household possessions to the upper floors of your home.
- If water has entered a garage or basement, do not walk through it – it may contain hazardous materials.
- Do not walk through moving water. Six inches of moving water can make you fall. If you must walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be quickly swept away. Attempting to move a stalled vehicle in flood conditions can be fatal.

- Stay clear of water that is in contact with downed power lines.
- Do not allow children to play around high water, storm drains or any flooded areas.

For your Automobile

If you have a car, fill the gas tank in case you have to leave. In addition, check or have a mechanic check the following items on your car:

- Antifreeze levels - ensure they are sufficient to avoid freezing
- Battery and ignition system - should be in top condition and battery terminals should be clean
- Brakes - check for wear and fluid levels
- Exhaust system - check for leaks and crimped pipes and repair or replace as necessary. Carbon monoxide is deadly and usually gives no warning
- Fuel and air filters - replace and keep water out of the system by using additives and maintaining a full tank of gas
- Heater and defroster - ensure they work properly
- Lights and flashing hazard lights
- Oil - check for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well
- Thermostat - ensure it works properly
- Tires - make sure the tires have adequate tread. All-weather radials are usually adequate for most conditions.
- Windshield wiper equipment - repair any problems and maintain proper washer fluid level