

# Winter Storm & Blizzard Plan

## Introduction

The Brown University Winter Storm & Blizzard Plan is written to provide planning information and procedures for a winter storm or blizzard event. It is designed to work in conjunction with the Emergency Management & Preparedness Plan for incident response decision making by Senior Administrators, 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 winter storm seriously.

## Rhode Island's History of Winter Storm and Blizzard Preparedness

Probably the most well known winter storm in Rhode Island history is the Blizzard of 1978. On February 5, 1978 a severe nor'easter brought up to 55 inches of snow accumulation over a period of 33 hours. Many people were left without heat, water, food, and electricity for over a week after the storm ended. Approximately 10,000 people were forced to temporarily move into emergency shelters. Some 2,500 houses were reported seriously damaged or destroyed and 54 people were killed, many from fallen electric wires. Several people were found dead in downtown Providence, Rhode Island, particularly in the vicinity of the central police station, possibly while trying to seek shelter. The majority of the interstate system had to be shut down, with some stretches not reopening to traffic until the following week. Air and rail traffic also had to be shut down until the situation cleared up.

On December 13, 2007 a winter storm shut down many of the roads in the State and stranded thousands of people in their cars for hours. The timing of the storm and intensity (more than an inch of snow per hour) had a lot to do with the problems that it caused. Although there was not nearly as much accumulation as the 1978 blizzard, this storm caused massive traffic jams, thus proving that every winter storm requires preparation.

Like a hurricane, a winter storm or blizzard may create a tidal surge that could have devastating effects on. 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. More information about the Hurricane Barrier's function can be found in the Brown University Hurricane Plan.

## Winter Storm & Blizzard – General Information

A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. People can become trapped at home, without utilities or other

services. Heavy snowfall and blizzards can trap motorists in their cars. Attempting to walk for help in a blizzard can be a deadly decision. Winter storms can make driving and walking extremely hazardous.

The aftermath of a winter storm can have an impact on a community or region for days, weeks, or months. Storm effects such as extremely cold temperatures and snow accumulation, as well as coastal flooding, can cause hazardous conditions and hidden problems for people in the affected area.

A winter storm can range from a moderate snow over a few hours to blizzard conditions with blinding wind-driven snow that lasts several days. Some winter storms may be large enough to affect several states, while others may affect only a single community. Many winter storms are accompanied by low temperatures and heavy and/or blowing snow, which can severely reduce visibility.

## Definitions

Blizzard Warning – Notification by the National Weather Service, meaning sustained winds or frequent gusts to 35 miles per hour or greater and considerable falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

Shelters – Areas of refuge to be used in the event of a winter storm or blizzard. They should be a substantial building with limited glass. Refer to Red Cross and FEMA guidelines for details.

Storm Surge – A dome of water pushed on shore with the storm that may cause flooding up to 20 feet above normal sea level along major stretches of coastline.

Winter Storm Warning – Notification by the National Weather Service, indicating that a winter storm is occurring or is imminent in about 30 minutes to an hour.

Winter Storm Watch – The first notification issued by the National Weather Service that a winter storm is a definite threat to a geographic region. This is typically issued between 12 to 36 hours prior to storm begins.

## Developing a Family Preparedness Plan

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

## University Buildings

During a winter storm or blizzard, Facilities Management with the assistance of Public Safety and Environmental Health & Safety will determine which buildings will be closed and remain unoccupied.

Brown University owns or occupies several buildings protected by the Fox Point Hurricane Barrier or within the bounds of the 100 year floodplain and are subjected to flooding in certain scenarios. These buildings include the following:

- 121 South Main Street
- 70 Ship Street

- 43, 110 Elm Street
- 339, 349, 365 Eddy Street
- 196, 222 & 233 Richmond Street
- 200, 225 Dyer Street
- Marston Boathouse

### Winter Storm & Blizzard Preparedness at Brown

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 Winter Storm & Blizzard 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 Winter Storm Watch 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. A decision to close or delay the opening of administrative offices and functions shall be made by the Executive Vice President for Finance and Administration. A decision to cancel or delay scheduled classes and academic functions shall be made by the Provost. More information concerning the Principles and Communications Regarding Weather-Related Closings and Delays.

#### At the Beginning of the Winter Season

- All individuals, departments and Core Crisis Team members should review the Winter Storm & Blizzard Plan, Emergency Action Plan, and other emergency plans.
- Departments should review and update their business continuity plan in the BrownReady system.
- Public Safety, Facilities Management, Dining Services and others should confirm accurate and current telephone numbers for support vendors/responders such as water suppliers, emergency generator suppliers, fuel suppliers, food suppliers, snow removal contractors and others as needed.
- Dining Services should consider available supplies of food, water, and other necessities should extended shelter-in-place procedures be required.
- Facilities Management should:
  - Arrange for adequate fuel supplies for vehicles, boilers and generators
  - Check grounds and remove dead limbs
  - Properly support weakly rooted trees
  - Clean up loose debris
  - Begin moving all loose equipment and materials
  - Check roofs for loose debris
  - Make sure all storm & floor drains are clear

#### When a Winter Storm or Blizzard is Predicted

When a winter storm or blizzard is predicted the following groups should take action on the items listed below to ensure proper preparedness.

[Core Crisis Team winter storm & blizzard procedures](#)

- Review Winter Storm & Blizzard Plan, Emergency Action Plan, and other emergency plans.
- Begin frequent monitoring of weather related media sources including the National Weather Service, NOAA, FEMA, RIEMA and PEMA.
- Core Crisis Team reviews current conditions and discusses general plans and readiness and recommends actions to Policy Committee.
- Core Crisis Team and appropriate Administrators begin implementation of shelter-in-place procedures as needed depending on conditions and warnings.

#### University department winter storm & blizzard procedures

- Follow the directions that the University provides regarding the closure of the University.
- Initiate any specific departmental shut down procedures.
- 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 for specific recommendations well in advance.
- Remove personal items that may become damaged since they are not covered by University Insurance.
- Libraries and Museums begin preparation for priority collections and exhibits as needed.
- Backup of records, catalogs and other relevant data should occur.
- Consider protecting books, valuables and equipment by covering with plastic sheeting, particularly in areas where water and weather intrusion has occurred previously.
- Research staff shall begin preparations of laboratory facilities by completing experiments, backing up computer data, storing materials and securing rooms.
- Center for Animal Resources and Education (CARE) staff will assess the needs of the animals and prepare for limited staffing until the storm has passed.

#### Athletics winter storm & blizzard procedures

- Athletics will work with Facilities Management to consider preparations necessary at the Marston Boathouse if there are significant storm surge predictions.
- Make sure all essential vehicles are fully fueled, stocked and inspected.
- Adjust schedules as needed to ensure the safety of students, coaches and staff. Travel considerations are paramount.

#### Dining Services winter storm & blizzard procedures

- Dining Services will review inventory and ensure it can provide food and water for all students and essential staff for at least a 7 to 10 day duration.
- Dining Services will review emergency water supplies and will coordinate with Facilities Management or others as needed if it has been determined that water should be moved to an accessible and secure location before the storm arrives.
- All essential personnel shall report to supervisors for assignments.
- Make sure all vehicles are fully fueled, stocked and inspected.

#### Facilities Management winter storm & blizzard procedures

- Make sure all vehicles are fully fueled, stocked and inspected.
- Make sure equipment fuel levels are inspected and filled for the duration of winter storms. For prolonged winter storms inspect building locations for fuel deliveries to ensure equipment can be accessed.
- Ensure that, outdoor equipment, trash and recyclable 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 and prepare their sites for the coming storm.
- All essential personnel shall report to supervisors for assignments.
- Secure provisions for essential personnel that are working during the winter storm.
- Issue plastic sheeting and other protective materials as requested and deemed appropriate.
- 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.
- Inspect for water intrusion in areas of building prone to flooding. Facilities Management initiates procedures to protect buildings located in the 100 year flood plain including the Marston Boathouse. Procedures may include providing sandbags 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).
- Coordinate with Public Safety if evacuation of buildings located in the floodplain is required. Consider the shutdown of utilities in these buildings.
- 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, and snow moving machines and tools.
- Inspect roofs during prolong winter storms and post snow storms for snow loads and redistribution of snow drifts as needed while following fall protection measures.
- Inspect and clear roof drains for proper clearances, at gutter collection points, at HVAC air intakes and roof top emergency generators.
- Inspect and clear drains, window wells and gas meters near air intake to buildings.
- Inspect and de-ice walkways, building entrances/exits and parking lots.

#### Health Services winter storm & blizzard procedures

- All essential personnel shall report to supervisors for assignments.
- Make sure all essential vehicles are fully fueled, stocked and inspected.

#### Human Resources / University Communications winter storm & blizzard procedures

- Human Resources and University Communications will update the University's Employee Emergency Information Line (401-863-3111) and the [University Homepage](#) respectively and notify the appropriate media of University delays and closings.
- The University's Employee Emergency Information Line (401-863-3111) and [University Homepage](#) should begin to provide information and emails will be sent.

#### Public Safety winter storm & blizzard procedures

- Make sure all vehicles are fully fueled, stocked and inspected.
- All essential personnel shall report to supervisors for assignments.
- Help verify that all non-essential personnel have evacuated the campus and unoccupied buildings have been secured.
- Coordinate with Facilities Management if evacuation of buildings located in the floodplain is required.

#### Student winter storm & blizzard preparation procedures

- Student Life begins notification to students regarding shelter-in-place procedures, locations and other details as needed.

- Student Life will communicate with students regarding designated shelters if necessary.
- Off-campus students should prepare some food, snack items and water as part of their preparations. FEMA recommends one gallon of water per person per day for drinking and other uses.
- 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 winter storms & blizzards 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 in the designated parking area until after the storm.
- If an emergency shelter is provided, students should bring the following items to their temporary assigned living area (shelter):
  - 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 a shelter

#### **During a Winter Storm or Blizzard**

- All remaining residents should stay indoors throughout the entire storm.
- 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 the storm, 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 storms passes or power is restored.
- Do not use candles during power outages due to the increased fire hazard.
- 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 the case of an emergency since non-emergency calls can overload the phone systems.

#### **After a Winter Storm or Blizzard**

Following the lifting of the winter storm or blizzard 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.

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 EMS, Fire and Police.
- 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 egress, security and loose material.
- Secure campus buildings from unauthorized access and looting.

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

Essential staff performing snow removal operations should follow the guidance listed in the [Snow Removal Safety Program](#).

The essential staff should also follow the guidance listed in the [Working in Extreme Temperatures Program](#).

### **Resumption of University Operations**

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 Office of Student Life will assist with relocating students back to residence halls if shelters had been set up. Deans will be available to support students during this 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) 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 BrownAlert which can send text messages, email or voice messages.
  - Students may enter cell phone number in Banner at: <https://selfservice.brown.edu/>
  - Faculty and staff may enter cell phone number in Workday at: <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 contact information to their supervisors. It may be helpful to provide personal cell phone numbers and non-Brown email addresses.

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 ([BrownReady](#)) provides additional useful information and links.

### **Brown Resources**

- **Faculty & Staff Emergency Information Number (message) 401-863-3111**
- Brown University Homepage: <http://www.brown.edu/>
- [Principles and Communications Regarding Weather-Related Closings and Delays](#)
- Brown University Emergency Preparedness ([BrownReady](#))
- [Department of Facilities Management](#) – 863-7800
- [Department of Public Safety](#) – 863-3322 (863-4111 for Emergencies)
- [Division of Campus Life](#) – 863-1800
- [Office of Environmental Health & Safety](#) – 863-3353
- [Human Resources](#) – 863-3175

### **Other Resources**

- [Rhode Island Emergency Management Agency \(RIEMA\)](#)
- [Providence Emergency Management Agency \(PEMA\)](#)
- [American Red Cross](#)
- [National Weather Service](#)
- [National Oceanic & Atmospheric Administration \(NOAA\)](#)
- [Intellicast](#)



**APPENDIX A**  
**Family Preparedness**

## Family Preparedness

### Winter Storms

While the danger from winter weather varies across the country, many Americans are likely to face some type of severe winter weather at some point in their lives. That could mean snow or subfreezing temperatures, strong winds or even ice or heavy rain storms. One of the primary concerns is the winter weather's ability to knock out heat, power and communications services to your home or office, sometimes for days at a time. The National Weather Service refers to winter storms as the "Deceptive Killers" because most deaths are indirectly related to the storm. Instead, people die in traffic accidents on icy roads, hypothermia from prolonged exposure to cold, or carbon monoxide poisoning from unsafe heaters. It is important to be prepared for winter weather before it strikes.

### 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, snow loading, 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 them 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 winter storms or blizzards.

- Make sure your home is well insulated and that you have weather stripping around your doors and windowsills to keep the warm air inside. Insulate pipes with insulation or newspapers and

plastic and allow faucets to drip a little during cold weather to avoid freezing. Learn how to shut off water valves (in case a pipe bursts).

- Keep fire extinguishers on hand, and make sure everyone in your house knows how to use them. House fires pose an additional risk as more people turn to alternate heating sources without taking the necessary safety precautions.
- Install carbon monoxide detectors throughout your home, especially if you are planning to use a generator or alternate heating source. Never run a generator indoors.
- Know ahead of time what you should do to help elderly or disabled friends, neighbors or employees.
- Consider evaluating the structural stability of your roof to sustain unusually heavy weight from the accumulation of snow. If you have a flat roof, check to see if all of the roof drains are clear.

### **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 or cooking to prepare
- Manual can opener and other cooking supplies
- Plates, utensils and other feeding supplies
- First Aid Kit & instructions
- Fire extinguisher
- Prescription medications
- A copy of important documents & phone numbers
- Warm clothes and rain gear for each family member
- Disposable or other 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

Additional items to add to your Emergency Supply Kit during the winter:

- Ice melt and/or sand for use on sidewalks and driveways
- Snow shovels and other snow removal equipment
- Adequate warm clothing and blankets

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 N95)
- 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

**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 and air pressure. All-weather radials are usually adequate for most winter conditions. However, some jurisdictions require that to drive on their roads, vehicles must be equipped with chains or snow tires with studs.
- Windshield wiper equipment - repair any problems and maintain proper washer fluid level.