

Risk Management Guidebook

Preparing for and Surviving a Hurricane



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What is a Hurricane?

Hurricanes are products of a tropical ocean and a warm, moist atmosphere. Powered by heat from the sea, these storms typically cause billions of dollars in damage to homes and businesses annually. Often numerous deaths result as they make landfall and work their way inland.

In the United States, all coastal areas bordering the Atlantic Ocean and the Gulf of Mexico are subject to hurricane strikes. Although the southeastern and gulf coast states have the greatest potential for direct impact, the upper mid-Atlantic and northeastern coastal states are at risk as well. Business owners and the public often assume that hurricanes are only a coastal problem, but inland areas hundreds of miles from the coast are typically affected by hurricane and tropical storm force winds, tornadoes and freshwater flooding.

The official hurricane season in the northern hemisphere is June 1 through November 30th each year with major storms occurring throughout this time window.

Hurricanes are classified into five categories based on their wind speed, central pressure and damage potential. The Saffir-Simpson Hurricane Scale (see

page 2) is used and referred to in weather reporting as a way to estimate the potential for loss of life and damage. Category three and higher storms are considered major hurricanes; but all hurricanes regardless of the category are extremely dangerous. Hurricanes can strengthen in a matter of hours. While our ability to predict the path of these storms has improved through computer modeling, it cannot predict with 100 percent accuracy. All hurricanes warrant immediate attention from the general public and our business partners alike. Business owners who have experienced hurricanes know that no two storms are the same. Making assumptions and failing to prepare for a hurricane can result in the loss of life and devastation of businesses.



Hurricane Facts:

- A number of our business partners currently reading this document will be directly impacted by a hurricane this year.
- Studies of hurricanes show that both the damage to buildings and inventory can be significantly reduced by implementing a comprehensive hurricane emergency/ preparedness action plan.
- A typical hurricane is about 300 miles wide.
- Hurricane-force winds can extend outward from 25 to 150 miles depending on the hurricane's size.
- The eye at the hurricane's center is a relatively calm and clear area wrapped by destructive and deadly winds.
- The calm of the eye should never be assumed to be the end of the storm. It is not!
- The northeast quadrant of a hurricane is frequently the most dangerous in terms of the storm surge, winds and tornadoes.

Saffir-Simpson Hurricane Scale

Category 1

Winds: 74-95 MPH

Minimal damage: Unanchored mobile homes, vegetation and signs.

Storm Surge: 4-5 feet

Category 2

Winds: 96-110 MPH

Moderate damage: All mobile homes, roofs, small craft, flooding.

Storm Surge: 6-8 feet

Category 3

Winds: 111-130 MPH

Extensive damage: Small buildings, low-lying roads cut off.

Storm Surge: 9-12 feet

Category 4

Winds: 131-155 MPH

Extreme damage: Roofs destroyed, trees down, roads cut off, mobile homes destroyed, beach homes flooded.

Storm Surge: 13-18 feet.

Category 5

Winds: More than 155 MPH

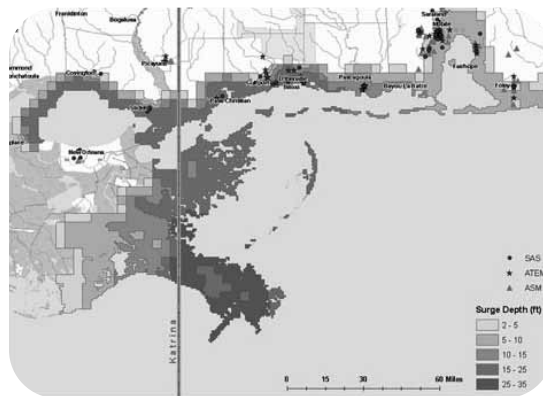
Catastrophic damage: Most buildings destroyed, vegetation destroyed, major roads cut off, homes flooded.

Storm Surge: 18 feet plus (Hurricane Katrina)

Paid insurance losses in billions



Hurricane Katrina storm surge depths and exposed locations



Know the Terms

Familiarize yourself with these terms to help you identify a hurricane hazard:

- Tropical Depression: An organized system of clouds and thunderstorms with defined surface circulation and maximum sustained winds of 38 MPH or less.
- Tropical Storm: An organized system of strong thunderstorms with defined surface circulation and maximum sustained winds of 39-73 MPH.
- Hurricane: An intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of at least 74 MPH.
- Storm Surge: A dome of water pushed onshore by hurricane and tropical storm winds. Surges can reach 25 feet high and be 50-100 miles wide.
- Storm Tide: A combination of storm surge and the normal tide (example: 15 foot storm surge combined with a 2 foot normal high tide creates a 17 foot storm tide.)
- Hurricane/Tropical Storm Watch: Hurricane/Tropical Storm conditions are possible in the specified area usually within 36 hours. Tune in to NOAA (see resources, page 10) weather radio, commercial radio or television for information.
- Hurricane/Tropical Storm Warning: Hurricane/Tropical Storm conditions are expected in the specified area usually within 24 hours.
- Short Term Watches and Warnings: These warnings provide detailed information about specific hurricane threats, such as flash floods and tornadoes.

Determine Your Risk

We suggest a common sense strategy to hurricane risk assessment.

Business location in a coastal area 50 – 75 miles from shore.

Your risk of loss of life, property damage and business interruption from wind storm is substantially greater than that of a business located beyond that range. Businesses within this proximity to the coast should protect all the doors and windows of their buildings. Known as the building's envelope, protecting these points of entry from wind and water will minimize the structural damage which can occur. Protect the interior of your building, as well as files, furniture and equipment from storm damage and the resulting mold. The following features added to your building can mean the difference between returning to a building with minor damage or one with major structural and interior damage that literally shuts your business down:

- Hurricane shutters, panels or shields
- Wind-rated windows
- Braced or wind-rated garage doors
- Fitted plywood to protect windows and doors

Older garage doors are extremely vulnerable. Replacement of the doors and tracks with 140 mph wind rating is recommended. Business owners should consider that, at some point in time, the insurability of coastal structures may hinge upon whether the envelope of the building in question is protected. Such protection should be considered a long-term investment and the cost of doing business in a coastal setting.

Business location in a coastal area more than 50 – 75 miles from shore.

While not essential, protecting the building's envelope in these instances is still a good idea and should be considered. Readers should note that in 1989 Hurricane Hugo made landfall just north of Charleston, South Carolina, and traveled 175 miles inland where it buffeted Charlotte, North Carolina, with winds of over 100 mph. This type of scenario for future storms should be expected.

While the exact cause of global warming can be argued, one thing appears to be certain: the frequency and intensity of hurricanes is increasing. Since 1990, the global frequency of intense hurricanes reaching category 4 or 5 has increased approximately 63 percent. In 2005, there were a record 28 hurricanes and three category 5 storms.

(Information based in part on Study in Scientific American, September 16, 2005, as reported by Time Magazine Oct. 3, 2005).

Regardless of proximity to the coast, the following “best practices” must be considered:

- Develop a written Hurricane Preparedness Plan.
- Determine how best to provide emergency backup power for your facilities.
- In new construction, make sure that hurricane protection and emergency power backup are key design features.
- Buy flood insurance if there is even a chance of a flood in your area or the potential that storm surge will affect your property. Review the National Flood Insurance web site at fema.gov for more information.
- If located in a low-lying area, arrange for an alternative storage lot at a higher elevation where vehicle/equipment inventory can be relocated prior to a hurricane.
- Depending upon your business type and size, develop a relationship with a security guard service in order to receive priority treatment for your post-hurricane security needs.



Hurricane Preparedness Plans

Developing a written hurricane preparedness plan and training employees to implement your plan is critical. When you develop your written plan, make sure to address the following major areas:

- If your business has multiple locations, each location should have a written plan.
- The plan should include a simple list of tasks for all phases of hurricane operations, including Pre-season Preparedness, Hurricane Watch, Hurricane Warning and After the Hurricane.
- Include specifics for the protection of buildings, data, records, equipment and inventory.
- Provide a Hurricane Chest (see page 6) stocked with essential supplies for each location or department.
- Consider which employees will be available to assist with hurricane preparation, as some may reside in mandatory evacuation areas and may not be available.
- Determine who you want to implement your plan, assigning hurricane preparation tasks to individual employees or teams depending upon the size of your facility.
- Develop an emergency contact list with 24-hour telephone or cell phone numbers that will enable management to contact essential employees.
- Communicate a policy that identifies when employees will be released from work, as well as the company's expectations regarding how and when employees will contact management to determine when they are to return to work.

Local Community Preparedness Plans

After you have developed your own hurricane preparedness plan, find out about your local community hurricane preparedness plan. Each community subject to a hurricane threat should have its own action plan. Local officials should have detailed information for your immediate area. Please listen to and follow their recommendations before, during and after the storm.

Hurricane Chest

A hurricane chest located in each building should contain most of the emergency supplies for your business. All employees should know the location of the chest. Depending upon your type of business, suggested items for a hurricane chest include:

- Business Recovery Plan: Includes the roles and responsibilities for employees in the recovery of the business.
 - Business Recovery Team: Designated persons with landline and cellular phone numbers, addresses, etc.
 - Emergency Services Contacts: Vendor contact information for utilities, phone, sanitation, fuel, security, contractors, off-site storage, phone, etc.
 - Emergency Communications Equipment: Cellular phones, two-way radios for immediate communication with the Business Recovery Team.
 - Flashlights/Portable lights with plenty of batteries: In the event of a nighttime power outage or for light in confined areas.
 - Multiple rolls of plastic bags, labels, masking tape and markers: Use to collect business documents on property until able to sort and review.
 - Rolls of yellow or orange hazard tape: to close off any hazardous areas or areas closed to public.
 - New padlocks and key sets (still packaged): For lockdown of property or to secure access to lots.
 - Pre-paid and non-activated phone cards: For long-distance calling to manufacturers, suppliers, employees, family members, etc.
- Other items that will not fit in the chest, but are good to have:
- Diesel fuel generator
 - Extra fuel storage containers for immediate and short-term use

NOAA Weather Radio All Hazards

The NOAA (National Oceanic and Atmospheric Administration) All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from a nearby National Weather Service office. NWR broadcasts National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day. Working in conjunction with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information.

Securing Your Business

- Locate the hurricane supply chest and distribute the necessary supplies.
- Service writers should notify customers to retrieve their vehicles if at all possible 48 hours in advance.
- Move all vehicles into the garage - parked as tightly together as possible. Remove the keys and return them to a locked cabinet. Move the balance of the fleet to the highest point on the lot and park as tightly together as possible returning keys to a locked cabinet.
- If it plugs into the wall, unplug it! This includes: terminals, refrigerator, coffee maker, calculators, fax machine, postage machine, time clock, copy machine, computers, printers, phones, cable TV, etc.
- Cover all terminals, computers, printers, phones, fax and copy machines, postage meters, etc. with plastic and tape it down.
- Remove as many articles as possible from service writers' stations (computers, phones) and store them in a secured office. Place all loose articles in drawers and cabinets.
- Use larger trucks and vans to create wind blocks around service writers' stations, doors and windows.
- Move all shop torches and welders to safe storage locations.
- Place all possible paperwork, including your repair orders and contracts, in a safe or locked desk and store above ground level to avoid water damage. Lower level drawers need to be covered in plastic and moved to higher ground.
- Install available shutters where needed (service, office, customer lounge).
- Secure all loose items such as sheet metal, trash cans, signs, plants, banners, tables, etc.
- Block in sheet metal dumpster and secure loose scrap parts outside, if applicable.
- Shut down gas pumps, if applicable.
- Have technicians secure work areas. Allow mechanics to take home their personal tools. Secure all toolboxes inside a locked area.
- Make certain sand bags are placed outside doors.
- Take all personal items home with you.
- Move all supplies off the floor (computer paper, payable bins, cardboard files, paper shredder, loose files).
- Remove all checks and cash and give to comptroller for safe keeping.
- Know where the first aid kit is!

When is it time to take action?

As a hurricane approaches, pay close attention to the computer modeling programs used by authorities to forecast the path of the storm. Exercise common sense, erring on the conservative side, so that sufficient time is allowed to implement your Hurricane Action Plan. Once a hurricane warning has been issued, there most likely will be insufficient time for our larger dealership partners or business owners to take the steps necessary to complete preparations. There is no "one size fits all" preparation timetable for every business. A small business may be able to complete preparations in less than one day. A large dealership group may need several days. In general, the timing scenario suggested in the subsequent section should be followed.

Pre-Season

- Update Emergency Contact List.
- Meet with essential employees and review preparedness plan.
- Update plan if locations have been added or redesigned.
- Verify that hurricane chests are fully stocked.
- Visually locate and verify that hurricane shutters\panels are accessible.
- Test any and all emergency generators and stockpile fuel in approved containers.
- Contact vendors and regularly used contractors to remind them of your post-hurricane expectations and needs.
- Determine evacuation routes and post them for your employees.
- Communicate where the official hurricane shelters are located.

Hurricane Watch

- Trigger your Hurricane Action Plan.
 - Install hurricane protection over doors and windows. Install garage door bracing if doors and tracks have not been replaced with wind-rated units.
 - Place sandbags at the base of each door on the exterior of the building.
 - If protection for the building's envelope is not available, stage larger trucks and vans so they can be quickly moved to create wind blocks around doors and windows.
 - Tie down or bring indoors any equipment, tanks, barrels, etc. which may be blown around by hurricane winds.
 - The business owner should personally contact the owner of the security service and contract for 24-hour, post-hurricane security.
 - Service Departments should notify customers that they must remove their vehicles from the premises immediately.
- Move higher value vehicles into service departments/warehouses if buildings are not located in flood prone or storm surge areas.
 - Relocate all vehicle/equipment inventory to off site pre-arranged storage lots if buildings are in flood prone or storm surge areas.
 - Vehicles left in lots should be located at the highest point and parked as tightly together as possible.
 - Store ignition keys to inventory and fleet in a secure interior room with no windows.
 - If in a flood prone or storm surge area, plan on moving as much valuable equipment as possible to another location or an upper floor.
 - Require employees to remove food and liquids from all refrigerators.

Hurricane Warning

- Turn off all non-essential electrical current to the buildings at the main circuit boxes, leaving on only power for burglar, fire alarm and fire sprinkler alarm systems to operate.
- Turn off the flow of natural and propane gas at the main shut off valves.
- Move office equipment to interior rooms and cover all file cabinets, terminals, computers, printers, phones, fax machine and copy machine, postage meter, etc. with plastic bags or rolled plastic and tape it around the items.
- Unplug all electrical equipment and appliances.
- Pull staged trucks and vans in front of unshuttered windows, glass doors and garage doors.
- Block or secure empty dumpsters.
- Deposit all cash and have comptroller or office manager secure checks offsite.
- Relocate as many toolboxes as possible in a secure interior room.
- Remind all employees of their responsibility to contact management immediately after the hurricane passes to determine a "return to work" schedule.
- Dismiss personnel.
- Leave with the assurance that you have mitigated your exposure to loss!



After the Hurricane

- Monitor radio and television to determine if authorities are allowing return access to your business location.
- Depending upon needs, immediately call to confirm that security guards are on their way to your place of business as soon as return access is allowed.
- Looting may occur both during and after the storm. Keep this in mind when returning after the storm.
- Assess damage to buildings from the exterior. If it appears that structural damage has occurred, do not enter your building.
- Be aware that live electrical power lines may be present and considered an electrocution hazard.
- Confirm that the building's electrical system is dry and utility power is reliable prior to reactivating main breakers.
- Contact your Zurich regional claims department to report any damage.
- Contact building, roofing, HVAC, electrical contractors as soon as possible to arrange for repairs pending Zurich's approval.
- As much as possible, attempt to mitigate additional damage to buildings and inventory by sealing window and door openings, covering items with plastic, etc.
- Take detailed photographs or video of damage to buildings and inventory for documentation prior to site clean up.
- Initiate clean-up of the site.
- Employees return to work according to staffing schedule.

Online Resources

The following websites are provided as a service to assist Zurich's customers in obtaining additional information. Zurich does not endorse any of the services, products or vendors listed below.

Hurricane Preparedness Plans

- Detailed sample hurricane preparedness plan:
www.harriscountycitizencorps.com
- Short sample hurricane preparedness plan:
cdera.org
- Sample disaster preparedness plan:
ready.gov

Garage Door Bracing and Retrofit

- Manufacturer of garage door brace:
securedoor.com
- Basics plus garage door protection:
ibhs.org

Contact your local garage door sales and installation contractors.

Hurricane Shutters / Panels / Wind Screens

- Basic description of protection with pricing:
sarasota.extension.ufl.edu
- Plywood shutter design:
apawood.org

- Vendor site with variety of shutters:
tropicalstormshield.com
- Wind screens: tropicalstormshield.com
allstormbusters.com

Hurricane Preparation/Education

- National Oceanic and Atmospheric Administration: hurricanes.noaa.gov
- List of disaster preparedness organizations:
sarasota.extension.ufl.edu
- National Hurricane Center – Preparedness:
www.nhc.noaa.gov
- National Hurricane Center – Weather Radio:
nws.noaa.gov
- FEMA - Preparedness:
fema.gov

Zurich

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800 840 8842 www.zurichna.com/zdu

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