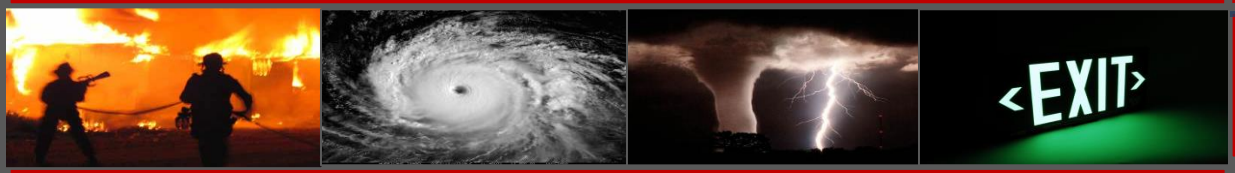
UNIVERSITY OF HOUSTON

HURRICANE PLANNING GUIDE

Guidelines for Hurricane Planning and Response



2014

UNIVERSITY OF HOUSTON

A Carnegie-Designated Tier One
Public Reasearch University

OFFICE OF EMERGENCY MANAGEMENT

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SECTION I – UH HURRICANE PLANNING GUIDE

INTRODUCTION

The University of Houston (UH) is vulnerable to impacts from tropical storms and hurricanes. This Hurricane Planning Guide provides guidelines and establishes protocols for an organized response to a hurricane. It addresses pre-storm preparation as well as post storm recovery actions. The timing and implementation of any or all steps may be altered based upon facts and circumstances surrounding any individual hurricane event. The primary objectives of the plan are as follows:

- Ensure safety and protection of faculty, staff, students and visitors
- Mitigate damage and protect university assets
- Restore business and academic operations as quickly as possible

This guide, along with separate department level hurricane plans, is developed to establish university-wide response strategies to be used in the event of a hurricane. Each UH Department is responsible for developing their own emergency plan and executing their own preparedness and recovery actions. These plans should include information specific to hurricane planning and recovery. This guide serves as a tool to assist departments in developing their own plan in order to respond and recover from potential and actual impacts of tropical weather.

SITUATION AND ASSUMPTIONS

SITUATION:

1. In the past, the UH campus has been impacted by several tropical storms and hurricanes. For this reason, it is expected that tropical weather will impact the UH campus again requiring departments to take protective actions.
2. The hurricane threat facing the State of Texas has the potential to cause catastrophic damage, mass casualties and mass fatalities. The occurrence of a catastrophic hurricane could quickly overwhelm affected local governments and rapidly deplete State of Texas resources. It is essential that all levels of government and agencies remain prepared to

continue to operate effectively during crisis and continue to ensure public safety, essential services, and uninterrupted coordination and control capabilities.

3. Effective prevention and preparedness operations, early warning and evacuation, and well-trained and equipped response forces may reduce the impacts caused by a hurricane. Effective pre-disaster prevention and mitigation initiatives can also reduce the amount of damage to property and facilities resulting from a disaster. Successful recovery operations are critical to the rapid restoration of infrastructure and services in the impacted area.

ASSUMPTIONS:

1. If the University of Houston (UH) is faced with hazardous conditions, the primary concern and priority will be life-safety issues followed by the protection of UH property.
2. The occurrence of a catastrophic event may cause widespread damage to the infrastructure and curtail emergency response capabilities of the University as well as state and local governments. Such an event could result in the government being unable to adequately provide for the safety and welfare of the general public.
3. The UH Emergency Operations Center and other essential facilities may be destroyed or become inoperable during a disaster. Additional effectiveness may be possible through use of a mobile coordination and control capability.
4. Primary communications systems may be destroyed, degraded, or rendered inoperable in a disaster.
5. The identification and continued protection of vital records is essential to the continuity of university operations and an effective return to normal operations.
6. Flooding and loss of power can cause critical issues in university facilities and public works infrastructure that may be out of service for days or weeks. These include electric power, water, wastewater, storm water drainage, and roads/bridges. Disruption of these services impact the ability of the university to re-open and for students, faculty and staff to return to campus.
7. Each department is responsible for developing their own emergency plan and executing their own preparedness and recovery actions, including monitoring information provided by University Administration.

SECTION II – CONCEPT OF OPERATIONS

INTRODUCTION

The Concept of Operations for any emergency on the UH campus is outlined in the UH Emergency Management Plan and can be found in the "Concept of Operations" section. A hurricane threat will be managed utilizing the same framework. However, this section will outline more detail specific to a hurricane threat and response.

TROPICAL WEATHER MONITORING

Hurricane season begins on June 1st and ends on November 30th of each year.

Each department should monitor the tropical weather forecast for the possibility of any local impacts. Tropical weather information is available from numerous sources ranging from local media to the internet. Below are a few suggested websites to monitor during hurricane season.

- National Hurricane Center http://www.nhc.noaa.gov/
- Houston/Galveston, Weather Forecast Office (NWS) http://www.srh.noaa.gov/hgx/

TROPICAL WEATHER TERMS

The following definitions are important terms utilized by weather forecasters and the media to communicate to the public the possible hazards and conditions that may be expected from approaching tropical weather. This list of definitions may be utilized and included in departmental hurricane plans.

Eye

The roughly circular area of comparatively light winds that encompasses the center of a severe tropical cyclone. The eye is either completely or partially surrounded by the eyewall cloud.

Eyewall

An organized band or ring of clouds that surround the eye, or light-wind center of a tropical cyclone.

Hurricane

An intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph (64 kt) or higher

Hurricane Warning

An announcement that hurricane conditions (sustained winds of 74 mph or higher) are *expected* somewhere within the specified area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

Hurricane Watch

An announcement that hurricane conditions (sustained winds of 74 mph or higher) are *possible* within the specified area. 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.

Landfall

The intersection of the surface center of a tropical cyclone with a coastline. Because the strongest winds in a tropical cyclone are not located precisely at the center, it is possible for a cyclone's strongest winds to be experienced over land even if landfall does not occur. Similarly, it is possible for a tropical cyclone to make landfall and have its strongest winds remain over the water.

Major Hurricane

A hurricane that is classified as Category 3 or higher. See the Saffir-Simpson Hurricane Wind Scale on Page 8.

Storm Surge

An abnormal rise in sea level accompanying a hurricane or other intense storm, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the cyclone. Storm surge is usually estimated by subtracting the normal high tide from the observed storm tide.

Storm Tide

The actual level of sea water resulting from the tide combined with the storm surge.

Tropical Depression

An organized system of clouds and thunderstorms with a defined surface circulation and maximum sustained winds of 38 mph (33 kt) or less

Tropical Storm

An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39-73 mph (34-63 kt)

Tropical Storm Warning

An announcement that tropical storm conditions (sustained winds of 39 to 73 mph) are *expected* somewhere within a specified area within 36 hours.

Tropical Storm Watch

An announcement that tropical storm conditions (sustained winds of 39 to 73 mph) are *possible* within a specified area within 48 hours.

The Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111-129 mph	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	130-156 mph	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures. Reference: National Weather Service

TROPICAL WEATHER NOTIFICATIONS

The UH Office of Emergency Management monitors tropical weather throughout the hurricane season. If a tropical system is a threat to the UH campus, then the UH Emergency Alert Notification System will be activated using the following progression:

General Notification – addresses a possible threat

- **Purpose:** To raise awareness
- An example of when this type of message may be used is to monitor tropical storms
- Distributed via:
  - E-mail to internal UH personnel (EMT, UHDPS Command Staff, University Communications)
  - Post to UH Emergency Operations Center (UHEOC) website: www.uh.edu/emergency
  - Emergency Management Bureau Facebook page (https://www.facebook.com/UHEMB)
  - Emergency Management Bureau Twitter page (http://twitter.com/UHEMB)

Advisory – addresses a threat that exists

- **Purpose:** To raise awareness and to advise the campus to take mitigation and preparedness measures
- Examples of when this type of message may be used is to advise the campus that UH is in the cone of uncertainty for a hurricane that is still days away.
- Distributed via:
  - E-mail to all Students, Faculty and Staff
  - Post to UHEOC website: www.uh.edu/emergency
  - Emergency Management Bureau Facebook page (https://www.facebook.com/UHEMB)
  - Emergency Management Bureau Twitter page (http://twitter.com/UHEMB)

Class Cancellation/Campus Closure notification – addresses a threat that is expected to impact the University.

- ❑ **Purpose:** To notify campus of a class cancellation or campus closure
- ❑ Examples of when this type of message may be used include an approaching hurricane (12-36 hours away)
- ❑ Distributed **Campus Wide** via:
  - ■ E-mail to all Students, Faculty and Staff
  - ■ Post to UHEOC website: www.uh.edu/emergency
  - ■ Emergency Management Bureau Facebook page (https://www.facebook.com/UHEMB)
  - ■ Emergency Management Bureau Twitter page (http://twitter.com/UHEMB)
  - ■ SMS Text Messaging (per University Administration discretion)

PROTECTIVE ACTION DECISIONS

1. As stated above, the UH Office of Emergency Management (OEM) will monitor the weather and will inform the Emergency Management Team of potential threats of tropical weather.

2. When tropical weather threatens the area, it may be necessary for UH to suspend some or all operations in order to protect lives and property. Closure decisions will be made by the President or his/her designee as outlined in the UH Emergency Management Plan.

3. Departments will monitor information provided by the UH Administration regarding potential or actual closures and be prepared to suspend departmental operations. Some departments will be required to continue certain essential functions.

4. Notification of a class cancellation or campus closure will be communicated through the UH Emergency Alert Notification System described in the previous section. The official source for UH emergency information is the UHEOC website (www.uh.edu/emergency). Closure and opening information along with other important statements will be posted on this website.

SECTION III – ORGANIZATION

UH EMERGENCY OPERATIONS CENTER

Mission

The UHEOC mission can be best understood in terms of three vital tasks:

1. Communication - effectively communicate and receive information. It is critical to inform stakeholders about the current situation. It is equally important to undertake intelligence gathering to manage an incident and to provide notification to crisis personnel, staff and to the campus community.
2. Command and Control - provide the command and control functions necessary to stabilize the incident by putting multiple response and recovery plans into action – triggering them as needed, providing the triage structure required to allocate resources and personnel, and assuring effective direction of the response operations.
3. Coordination and Documentation - create a mechanism to coordinate all of the steps taken to respond to an event and create a record of those actions to protect students, staff, faculty, infrastructure, and shareholder value.

Responsibilities

1. Management responsibility for the coordination between emergency response departments within the University.
2. Ensure University and department actions are accomplished within the priorities established at the UHEOC.
3. Ensure that department and inter-agency coordination is accomplished effectively.
4. Direct the appropriate staffing level for the UHEOC and continuously monitor organizational effectiveness.
5. Document the actions such as resource requests, costs, etc. during a hurricane event.

RIDE-OUT TEAM

Purpose

The University of Houston has some university functions that must remain operational during an emergency or incident. Critical infrastructure components to the university's function, such as utility services and information technology services are critical operations that may be rendered inoperable by an emergency incident. Therefore, if a failure occurs, continuity and recovery plans must be developed to assure prompt restoration of services. In order to maintain continuity, the University of Houston has developed the ride-out team program. The ride-out teams will remain on campus working to ensure that critical infrastructure components are uninterrupted during an emergency incident.

For more information on the Ride-Out Team, please see the Ride-Out Team Guide at http://www.uh.edu/emergency-management/planning-and-response/ride-out-teams/.

UH DEPARTMENTS

Each UH Department is responsible for developing their own emergency plan and executing their own preparedness and recovery actions, including monitoring information provided by University Administration. The UH Hurricane Planning Guide may serve as template for departments to develop their own department-specific hurricane planning procedures.

In addition, the attachments to the UH Hurricane Planning Guide may serve as tools such as forms and checklists that can help with the development and execution of hurricane preparedness procedures. These attachments may be incorporated into departmental hurricane plans.

SECTION IV – ASSIGNMENT OF RESPONSIBILITIES

PRE-STORM

UHEOC will:

1. Monitor tropical weather forecasts.
2. Monitor Harris County and City of Houston actions in regards to closures and evacuations.
3. Notify the campus community of potential hurricane threats in conjunction with University Communications and Relations.
4. Prepare for possible Suspension of UH Normal Operations.

UH Departments will:

1. Monitor tropical weather forecasts during hurricane season.
2. Monitor Official UH communications and notices regarding potential tropical weather threats.
3. Review departmental hurricane plans.
4. Review and replenish supplies for departmental Ride-Out Team members.
5. Refuel university vehicles. During hurricane season, it is recommended that departments maintain fuel tanks at half-full as a minimum in vehicles.
6. Alert Ride-Out Team personnel and others with essential functions and specific roles to ensure their ability to fulfill their obligations.
7. Prepare for possible Suspension of UH Normal Operations.

UH SUSPENSION OF NORMAL OPERATIONS

UHEOC will:

1. Notify the campus community of the suspension of normal operations in conjunction with University Communications and Relations.
2. Document Ride-Out Team personnel that are expected to report to campus.
3. Document and assist in coordinating university hurricane preparations.

UH Departments will:

1. Complete departmental hurricane preparation checklist. (Attachments 6 and 7 serve as departmental checklist templates)
2. Complete a general survey around each building and rooftop where accessible.
3. Secure facilities, loose items and equipment.
4. Follow guidance from University Information Technology regarding computer and data systems including back-up and storage of data.
5. Park fueled vehicles in a safe, secure location. Interior sections of parking garages or in parking lots away from trees are appropriate locations. Vehicle actions should be logged on Attachment 5 of this document and posted in the department/unit area.
6. Report all Ride-Out Team members' status to UHEOC by completing the Ride-Out Team Check-In form (found in the Ride-Out Team Guide). This form includes the contact information for Departmental Ride-Out Team Supervisor/Lead.

DURING STORM

UHEOC will:

1. Continue to monitor the weather and local information about the current status of UH and city resources, outages, etc.
2. Prepare and distribute situation reports to the University Administration and Ride-Out Team members.
3. Obtain accountability of ride-out team personnel on campus.

Ride-Out Team members will:

1. Attempt to keep essential operations functioning
2. Seek shelter indoors in a secure and safe location if/when conditions become too dangerous to continue functions. **Note:** If departmental staff must remain on campus to maintain essential functions, additional planning beyond the scope of this template is required for the department. Plans should address the needs of the critical operations and employees. Employee safety during an event is paramount. See Ride-Out Team Guide for more information at: http://www.uh.edu/emergency-management/planning-and-response/ride-out-teams/.

POST-STORM

UHEOC will:

1. Continue to monitor the weather and local information about the current status of city resources, outages, etc.
2. Continue to prepare and distribute situation reports to the University Administration and Ride-Out Team members.
3. Continue to obtain accountability of ride-out team personnel on campus.
4. Work with University Communications and Relations in order to communicate with UH students, faculty, and staff regarding the status of the campus.
5. Document and assist in coordinating damage assessments.

Ride-Out Team members will:

1. Provide rapid restoration of critical infrastructure components immediately following the disaster
2. Conduct a preliminary damage assessment of their building and report the information to the UHEOC. Appropriate documentation should be completed. Personnel should not enter buildings that are suspected or determined to be unsafe. Any dangerous conditions or issues requiring urgent response should be reported immediately to the UHEOC. It is important for departments to document damage, including photographs, in order to recover any potential insurance or FEMA reimbursement. A notation of the location, including building and room number, should be included in each photograph. (This can be accomplished by including a hand-written sign in the picture.)
3. Take safe protective actions that mitigate or reduce hazards in their buildings and areas. For example, placing barricade tape around a dangerous area in a building will help prevent people from entering the area. Ride-Out Team members should not take any actions which place themselves or others in danger.

UH Departments will:

1. Monitor and follow guidance from UH Administration and local officials regarding any special policies and/or procedures that may be in place following a storm.

2. Monitor Official UH communications and notices. These notices may include the status of the campus and information regarding when the university will resume normal operations.
3. Account for the well-being of all faculty and staff once the storm is over. If a department is unable to fulfill its functions as a result of damaged facilities, equipment or lack of personnel, the department may need to activate its Business Continuity Plan (BCP).

SECTION V – GUIDE DEVELOPMENT AND MAINTENANCE

GENERAL

The UH Hurricane Planning Guide was developed by the UH Office of Emergency Management (OEM) of the UH Department of the Public Safety. UH OEM is responsible for maintaining this guide annually.

Each Department is responsible for developing their own emergency plan with details specific to hurricane preparation, response and recovery. As stated previously, if the department requires staff to remain on campus in order to maintain essential functions (i.e. to serve on the Ride-Out Team), additional planning beyond the scope of this template is required for the department. Plans should address the needs of the critical operations and employees. Steps to ensure and promote safety should also be detailed. These plans should be reviewed and updated annually.

SECTION VI – REFERENCES

REFERENCE LIST

University of Houston Emergency Management Plan

The State of Texas Hurricane Response Plan

Harris County Office of Homeland Security and Emergency Management Hurricane Plan

University of Florida, Departmental Tropical Weather Response and Recovery Plan

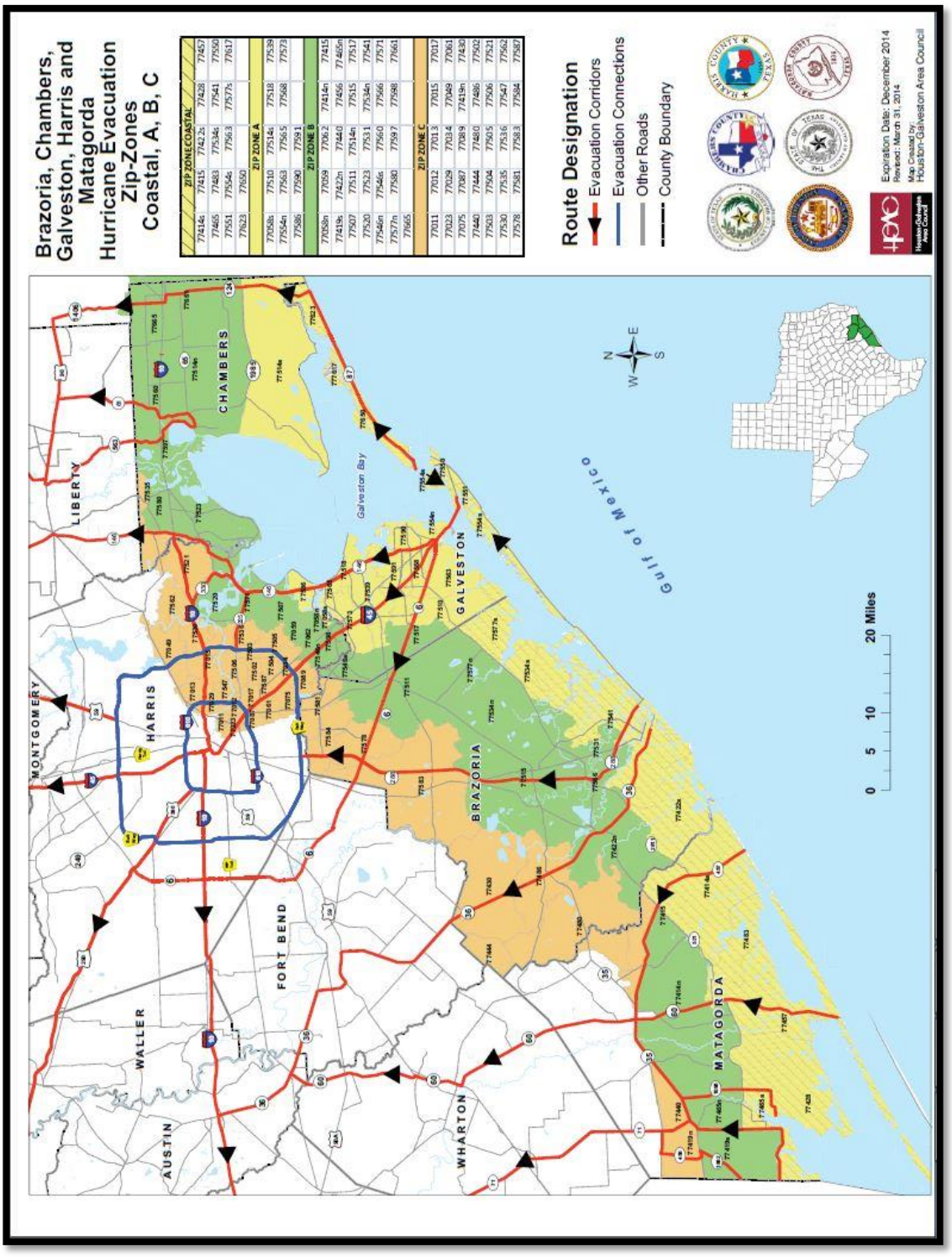
SECTION VII – ATTACHMENTS

ATTACHMENT 1 – ATLANTIC NAMES

2014	2015	2016	2017	2018	2019
Arthur	Ana	Alex	Arlene	Alberto	Andrea
Bertha	Bill	Bonnie	Bret	Beryl	Barry
Cristobal	Claudette	Colin	Cindy	Chris	Chantal
Dolly	Danny	Danielle	Don	Debby	Dorian
Edouard	Erika	Earl	Emily	Ernesto	Erin
Fay	Fred	Fiona	Franklin	Florence	Fernand
Gonzalo	Grace	Gaston	Gert	Gordon	Gabrielle
Hanna	Henri	Hermine	Harvey	Helene	Humberto
Isaias	Ida	Ian	Irma	Isaac	Imelda
Josephine	Joaquin	Julia	Jose	Joyce	Jerry
Kyle	Kate	Karl	Katia	Kirk	Karen
Laura	Larry	Lisa	Lee	Leslie	Lorenzo
Marco	Mindy	Matthew	Maria	Michael	Melissa
Nana	Nicholas	Nicole	Nate	Nadine	Nestor
Omar	Odette	Otto	Ophelia	Oscar	Olga
Paulette	Peter	Paula	Philippe	Patty	Pablo
Rene	Rose	Richard	Rina	Rafael	Rebekah
Sally	Sam	Shary	Sean	Sara	Sebastien
Teddy	Teresa	Tobias	Tammy	Tony	Tanya
Vicky	Victor	Virginie	Vince	Valerie	Van
Wilfred	Wanda	Walter	Whitney	William	Wendy

Reference: National Weather Service, National Hurricane Center

ATTACHMENT 2 – SOUTHEAST TEXAS REGIONAL EVACUATION ZIP ZONE MAP



Reference: http://www.hcoem.org/Documents/EvacuationMap.pdf

ATTACHMENT 3 – 72 HOUR EMERGENCY SUPPLIES CHECKLIST

UNIVERSITY of HOUSTON

DEPARTMENT of PUBLIC SAFETY

Office of Emergency Management

72-Hour Emergency Campus/Travel Preparedness Kit Checklist

The 72-Hour Emergency Campus/Travel Preparedness Kit Checklist is essential and tailored to meet the basic survival needs for a period of 72-hours during or after a disaster. Individuals can store emergency supplies, tools, and water in one location that is readily available in your room, home, office and/or vehicle. Supplies can be stored in advance in an easy to carry suitcase, duffle bag or backpack ensuring they are easily accessible in the event of an evacuation.

First Aid Supplies

- ✓ Adhesive bandages, various sizes
- ✓ Sterile dressing and pads, various sizes
- ✓ Conforming roller gauze bandage
- ✓ Triangular bandages
- ✓ Roll cohesive bandage
- ✓ Hand sanitizer
- ✓ Non-latex gloves
- ✓ Adhesive tape, 2 " width
- ✓ Antibacterial ointment
- ✓ Cold pack
- ✓ Scissors and tweezers
- ✓ Safety pins
- ✓ Cotton balls
- ✓ Sunscreen
- ✓ First aid manual

Non-Prescription and Prescription Med-Kit

- ✓ Aspirin and non-aspirin pain reliever
- ✓ Anti-diarrhea medication
- ✓ Antacid
- ✓ Prescriptions/medications
- ✓ Extra eyeglasses/contact lenses

Sanitation and Hygiene Supplies

- ✓ Washcloth and small towel
- ✓ Soap
- ✓ Toothpaste, toothbrush, shampoo
- ✓ Deodorant
- ✓ Lip balm, insect repellent
- ✓ Plastic garbage bags, small/large
- ✓ Feminine supplies
- ✓ Toilet paper

Equipment and Tools

- ✓ Portable, battery powered radio or wind-up/NOAA Weather Radio
- ✓ Flashlight (wind-up or battery powered)
- ✓ Waterproof matches or in waterproof container
- ✓ Manual can opener
- ✓ Paper cups, plates, and plastic utensils
- ✓ Duct tape, whistle, work gloves
- ✓ Paper, pens, and pencils
- ✓ Needles and thread
- ✓ Battery-operated travel alarm clock
- ✓ Re-sealable plastic bags
- ✓ Batteries

Food and Water

- ✓ Water
- ✓ Ready-to-eat meats, fruits, and vegetables
- ✓ Canned or boxed juice and soup
- ✓ High-energy foods (peanut butter, low sodium crackers, granola bars & trail mix)
- ✓ Special dietary needs
- ✓ Cookies, hard candy, cereals and powdered milk

Clothes and Bedding Supplies

- ✓ Clothing (3-day supply)
- ✓ Sturdy shoes or boots
- ✓ Rain gear, hat, sunglasses
- ✓ Blankets/sleeping bags and pillows

Documents and Keys

- ✓ Personal ID (Driver's License/Passport)
- ✓ Cash
- ✓ Extra set of home and vehicle keys
- ✓ Insurance papers, immunization records
- ✓ Emergency contact list
- ✓ Map

ATTACHMENT 4 – VEHICLE ASSIGNMENTS FOR TROPICAL WEATHER

*****When completed: copy, distribute and store in a safe location*****

This form is for logging where vehicles have been securely parked and where the keys are located in preparation for tropical weather.

Departments will park fueled vehicles in a secure location. Interior sections of parking garages or in parking lots away from trees are appropriate locations. Normally, this task should be completed by the vehicle's primary user.

Vehicle #	Vehicle Parking Location	Vehicle Key Location	Responsible Person

ATTACHMENT 5 – LABORATORY AND RESEARCH AREAS CHECKLIST

PREPARATIONS FOR TROPICAL WEATHER/HURRICANES

Departments are responsible for taking protective actions in their own laboratories. This checklist is designed to identify suggested tasks and assignment of responsibilities for preparing laboratory areas. Not all items are appropriate for all areas. Departments and researchers should add actions specific to their individual laboratories if needed. **The checklist should be completed as a part of the Departmental Hurricane Response Plan.**

When impacts from tropical weather are possible, consider necessary preparations to suspend ongoing experiments involving biological materials, radioactive agents and hazardous chemicals. When UH suspends normal operations, postpone operations in the laboratory, secure equipment and complete the checklist. **Please note that personnel should not stay in the laboratory during a storm if UH has suspended normal operations.**

Additional mitigation steps can be taken year-round to reduce impacts from tropical weather and other incidents, including:

- Keep chemical, radiological and biohazardous materials in your inventory to a minimum.
- Dispose of hazardous wastes and old chemicals routinely to minimize accumulation of hazardous materials in your facility.
- Laboratories with exterior windows should identify a secure area for storage of water reactive chemicals, radioactive materials and biohazardous agents. Ideally, materials with significant, potential hazard should be moved to interior rooms. (e.g. – solvents containing reactive metals, glove boxes containing air reactives)
- If dry ice will be needed pre- or post-incident, document vendor information, payment method and delivery or pick-up options. Note, dry-ice should not be transported in a closed vehicle for safety of the occupants.
- Maintain a supply of plastic, waterproof containers to store reactive chemicals, lab notes, research documentation, electronic data and other important materials.
- Plan in advance how to ensure the protection of valuable research equipment, samples and data.
- Maintain a stock of critical supplies to prevent disruptions.
- Update and distribute emergency and contact information to laboratory personnel. Regularly maintain emergency call list on the laboratory door.

LABORATORY AND RESEARCH AREAS CHECKLIST

PREPARATIONS FOR TROPICAL WEATHER/HURRICANES

☐	Action/Task	Location	Staff Responsible		Notes
			Primary	Alternate	
	Turn down refrigerators and freezers to the lowest practical settings and plug into emergency power where available.				
	Place recording maximum/minimum thermometers in refrigerators and freezers containing temperature critical supplies and samples.				
	Plug incubators into emergency power outlets if you must maintain cultures in vitro.				
	Cover and secure or seal vulnerable equipment with plastic.				
	Remove or secure equipment from outdoor and rooftop locations.				
	Ensure arrangements have been made for the care and feeding of laboratory animals. Follow recommended actions of UH Animal Care Operations.				
	In areas subject to flooding, relocate or elevate equipment, chemicals, wastes and other important items from the floor to prevent damage.				
	Secure radioactive isotopes, biohazardous agents, recombinant materials and hazardous chemicals to prevent breakage and release.				
	Fill dewars and cryogen reservoirs for sample storage and/or critical equipment.				
	Over-pack reactive chemicals in plastic, waterproof containers.				

☐	Action/Task	Location	Staff Responsible		Notes
			Primary	Alternate	
	Remove regulators and cap gas cylinders, except for CO2 needed to maintain cell cultures. Ensure all cylinders are secure.				
	Autoclave or inactivate infectious or rDNA waste.				
	Due to the possibility of power outages, store volatile, toxic materials in tightly sealed, break-resistant containers rather than fume hoods or open room.				
	Protect valuable files, research samples and notebooks in place or move to a safer location.				
	Protect notebooks and secure samples/data as necessary for colleagues unable to reach the lab.				
	Update emergency contact information including notification list on lab door. Add and expand temporary contact information if staying at a different location during storm.				
	Close and latch (or secure with tape if needed) filing cabinets and cupboards.				
	Back-up electronic data and store in multiple locations.				
	Follow UIT instructions for computer equipment preparations.				
	Close and lock all doors and windows before leaving.				
	If appropriate, complete Attachment 5 – Vehicle Assignments for Tropical Weather.				
	If appropriate, complete Attachment 7 – Office and Administrative Areas Checklist.				

ATTACHMENT 6 – OFFICE AND ADMINISTRATIVE AREAS CHECKLIST

PREPARATIONS FOR TROPICAL WEATHER/HURRICANES

Departments are responsible for taking protective actions in their own office and administrative areas. This checklist is designed to identify suggested tasks and assignment of responsibilities for preparing work areas. Not all items are appropriate for all areas. Departments should add actions specific to their individual work areas if needed. **The checklist should be completed as part of the Departmental Hurricane Response Plan.**

When impacts from tropical weather are possible, consider necessary preparations to protect equipment, records and data. When UH suspends normal operations, prepare to close office and administrative areas and complete the checklist. **Please note that personnel should not stay in work areas during a storm if UH has suspended normal operations**, **unless officially identified as a Ride-Out Team member.**

Additional mitigation steps can be taken year-round to reduce impacts from tropical weather and other incidents, including:

- Plan in advance how to ensure the protection of files, records and valuable equipment.
- Obtain and store needed supplies, such as plastic sheeting to cover equipment and files.
- Discuss preparatory actions with personnel and assign responsibilities.
- Update and distribute emergency and contact information to personnel.

OFFICE AND ADMINISTRATIVE AREAS CHECKLIST

PREPARATIONS FOR TROPICAL WEATHER/HURRICANES

☐	Action/Task	Location	Staff Responsible		Notes
			Primary	Alternate	
	Cover and secure vulnerable equipment with plastic.				
	When possible, move equipment and other valuable items into interior areas of the building away from windows. Tag moved equipment with department contact information for easy identification and retrieval.				
	In areas subject to flooding, relocate equipment and other valuable items to a higher floor or elevate. Tag moved equipment with department contact information for easy identification and retrieval.				
	Remove or secure equipment from outdoor and rooftop locations.				
	Clear refrigerators and freezers of items that could spoil if power is lost, but leave appliance plugged in.				
	Place important records and files in cabinets and cover with plastic.				
	Close and latch (or secure with tape if needed) filling cabinets and cupboards.				
	Back-up electronic data and store in multiple locations.				
	Follow UIT instructions for computer equipment preparations.				
	Clear desktops, tables and exposed horizontal surfaces of materials subject to damage.				

☐	Action/Task	Location	Staff Responsible		Notes
			Primary	Alternate	
	Place telephone in desk drawer if the cord is long enough. Do not unplug telephones.				
	Take personal possessions home. UH is not responsible for personal items damaged.				
	Secure windows and close blinds.				
	Change voice mail to indicate UH closure.		**All**		
	Close and lock all doors, including office doors, before leaving.				
	If appropriate, complete Attachment 5 – Vehicle Assignments for Tropical Weather				
	If appropriate, complete Attachment 6 – Laboratory and Research Areas Checklist				