



HURRICANE PREPAREDNESS MANUAL

2014



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PERSONAL PREPARATIONS

As a hurricane is approaching the Jacksonville area, all essential JAA staff, as identified by Senior Management, including Airport Managers for Jacksonville International Airport, Cecil Airport, Herlong and JAXEX airports are expected to assist by notifying employees within their departments and preparing and securing their respective buildings and facilities to minimize property and structural storm damage. As the storm nears (within 48 hours) all non-essential employees, as identified by Senior Management, may be released from their duties by Senior Directors, Managers, and Supervisors upon official notification. Maintenance, technical and management personnel shall be considered essential in the securing of the airport facilities and will be released prior to 24 hours of a storm's arrival to the Jacksonville area.

ESSENTIAL PERSONNEL

Essential personnel who are deemed critical in protecting airport facilities during a storm will be identified early (within 72 hours of storms arrival) as to allow these individuals time to secure their respective homes and to make arrangements for their families' safe evacuation if they deem necessary. Essential personnel may include, but is not limited to, the following:

- JAX Maintenance Personnel
- Operations and Security Personnel
- JAX Facilities Department
 - Foreman (1)
 - Electrician (2)
 - Facilities Maintenance (2)
 - Garage Maintenance (1)
- IT Representative
- JAA Police
- GA - Ramp Technician (Herlong)
- GA - Airport Managers (ALL)
- GA - Maintenance Technicians
- GA - Operations Duty Officer (Cecil)
- GA – Maintenance Foremen (Cecil)
- GA – Tech OPS (Cecil)
- GA – GA Operations & Maintenance Supervisor (JAXEX)

JAA employee recall listings shall be updated within the respective departments and forwarded to and maintained by Employee Relations.

The JAA may at its discretion authorize essential personnel to bring their immediate families to JAX for shelter. The JAA will try to accommodate these family members. If there is someone with special needs, it is strongly advisable that they seek shelter at a facility that can accommodate their unique needs within sufficient time prior to the storms arrival.

It is encouraged that staff take the time now, before an emergency, to assemble personal "hurricane kits" and to determine evacuation plans for you and your family.

For information and assistance, contact Risk Management or the Jacksonville Emergency Preparedness Division at 904.630.2472.

NON-ESSENTIAL PERSONNEL

Non-essential personnel are typically JAA employees who have been determined to be non-critical to maintaining airport operations continuity, safety and security during a hurricane.

PRE-HURRICANE PLANNING PROCEDURES – ALL DEPARTMENTS

PRE-HURRICANE PLANNING:

1. By June 1st of each year: Review pre-position contracts (vendors)
 - Space
 - Security
 - Clean-up
 - Sanitation
2. Each department should have on hand the following supplies to secure equipment and/or documents. Each department is responsible for procuring their respective supplies.
 - Trash bags
 - Duct tape
 - Plastic storage containers & locking lids
 - Labels
 - Batteries
 - Flashlights
 - Rope or cords
 - Tarpaulin
 - Visquine
3. Each Department should update their staff recall list and forward to ER.
4. Establish and review employee recall procedures.
5. Review and update phone numbers of all staff and tenant contact information.
6. Review list of essential/non-essential personnel for your department.
7. Review emergency work schedule.

FINALIZE PLANS:

These steps should be implemented immediately upon receiving alert notice and completed before the end of the workday – forty-eight (**48** Hours) prior to threat.

Completed:

_____ Staff reports for duty.

_____ Secure equipment.

_____ Clear off desks.

_____ Put files in water tight containers.

_____ Assist customers, as you are able until you receive notice that JAX will be closing.

_____ When departments receive official notice of closure:

1. Department heads do a final check of all areas under their supervision to ensure all preparations have been completed.
2. All doors should be closed; all electrical connections disconnected. Equipment and materials secured.
3. Non-essential employees should be released at this time.

_____ Once closed notice is received and inspection is complete, "Secured-No Access" labels must be place on all office doors. Once label is affixed to door, re-entry is prohibited without authorization from JAA Police.

_____ Departments should notify their respective supervisors/manager/department head or designee will notify their division head that they have completed their readiness procedures.

_____ Essential personnel not required at this time must be released.

DISASTER ADVISORY TEAM RESPONSIBILITIES

The **Disaster Advisory Team** will consist of the following:

Disaster Advisory Team	
Disaster Response Executive	Executive Director or designee
Disaster Response Assistant(s)	Chief Operating Officer (COO), Director, JIA Operations, Director, Facilities, Director of Safety and Security or designee(s)
Disaster Response Coordinators	Individual Airport Managers, or designee(s) Maintenance Managers, Operations Supervisors
Disaster Monitor	Risk Management

For precautionary measures, there will a primary and alternate command post from which the Disaster Response Executive can conduct the hurricane preparedness program. The primary location will be the JAX AOCC. The alternate location will be the JAA Administration Building.

At least thirty (30) days prior to the start of hurricane season, each airport manager should have submitted to Procurement a requisition for those items needed to maintain a complete inventory of essential items for hurricane preparations.

1. Responsibilities of the **Disaster Response Executive** or designee:
 - A. Manages and directs the implementation of hurricane procedures.
 - B. Notifies the appropriate personnel of hurricane watch conditions and changes as they occur.
 - C. Confers with Disaster Response Assistant(s) and coordinates the evacuation and/or safe storage of aircraft and equipment that might cause damage to JAA property and equipment.
 - D. Confers with the Disaster Response Assistant(s) and the Director of External Affairs about the dismissal of personnel and customers when the "Hurricane Warning Condition one (1)" is announced during a regular work day.
 - E. Coordinates with the Disaster Response Assistant and the Director of External Affairs on the return of personnel and customers after conditions have cleared.

2. Responsibilities of **Disaster Response Assistant(s)**:

- A. Directs the implementation of hurricane preparation efforts.
- B. Manages damage assessment efforts prior to and during restoration of flight operations.
- C. Coordinates with Emergency Preparedness Division during hurricanes; represents the Aviation Authority at the Emergency Operations Center (City of Jacksonville).
- D. Implements Police procedures & responsibilities.

3. Responsibilities of **Disaster Response Coordinators**:

- A. Directs the implementation of hurricane preparation efforts in their respective areas.
- B. Manages damage assessment efforts prior to and during restoration of flight operations.

4. Responsibilities of **Disaster Monitor (Risk Management or designee)**:

The following actions will be taken accordingly as Hurricane Conditions develop:

Under a Condition IV Alert (72 hours prior):

- A. Monitors the location of tropical storms and hurricanes on a tracking chart.
- B. Records the following information about each advisory issued by the National Weather Service:
 - 1. Date
 - 2. Time
 - 3. Location
 - 4. Wind Speed
 - 5. Direction of Travel

Under Condition III Readiness (48 hours prior):

- A. Coordinates monitoring the National Weather Service weather advisories.
- B. Informs the Disaster Response Executive and the Disaster Response Assistant(s) every three (3) hours when the National Weather Service advises that conditions are present for a tropical storm to develop into a hurricane which might threaten the mainland.

Under Condition II Watch (24 to 36 hours prior):

- A. Continues to coordinate monitoring the National Weather Service weather advisories.
- C. Informs the Disaster Response Executive and the Disaster Response Assistant(s) every three (3) hours when the National Weather Service advises that conditions are present for a tropical storm to develop into a hurricane which might threaten the mainland.

Under Condition I Watch (within 24 hours):

- A. Continues to coordinate monitoring the National Weather Service weather advisories.
- B. Informs the Disaster Response Executive and the Disaster Response Assistant(s) every three (3) hours when the National Weather Service advises that conditions are present for a tropical storm to develop into a hurricane which might threaten the mainland.

NOTE: After hurricane conditions have cleared, immediate response will be required of managers and supervisors to assess the amount of damage and continue normal operational status of JAA facilities.

**KEY PERSONNEL ARE SUBJECT TO RECALL IF
NECESSARY**

Return to work procedures:

1. After the storm passes, ALL JAA Employees may call a designated number to listen to a recorded message on return-to-work.
2. Once roads are cleared of possible flooding, debris, etc., personnel will make every effort to return to JAA assigned work areas for instructions and direction to restore the facilities to normal flight operations.
3. Report to your normal worksite for duty, unless you have been otherwise assigned.

OPERATING SERVICES GROUP	
Executive Director (or designee)	
Chief Operating Officer (or designee)	
Senior Directors	
Airport Managers	
Director of Safety and Security	

DISASTER SURVEY GROUP	
Primary	Alternate
Chief Operating Officer	Chief Financial Officer
Director, Facilities	
Director, JIA Operations	
Chief of Cecil	
Airport Manager, Cecil Airport	
Airport Manager, Herlong Airport	
Airport Manager, JAXEX Airport	
Director of Safety and Security	Police Lieutenants
Risk Management	

HURRICANE CHECK-OFF LIST - GENERAL

This check list is intended to be a broad indicator of prepared-ness status.

The **Disaster Response Executive**, or his or her designated representative, will complete the checklist as each degree of readiness is completed or communicated as completed.

Under Condition IV Hurricane Alert (72 Hours prior):

- _____ Disaster Response Executive or his or her designated representative will ensure that all responsible parties are alerted.
- _____ Disaster Monitor reports storm status every six (6) hours.
- _____ Disaster Response Assistant(s) report daily status of readiness.
- _____ Airport Managers/Maintenance Managers audit and ensure adequate hurricane supplies/inventory are available.
- _____ Tenant advisory meetings are being held twice a day.

Under Condition III Hurricane Readiness (48 hours prior):

- _____ Disaster Response Executive or his or her designated representative will ensure that all responsible parties are alerted.
- _____ Disaster Monitor reports storm status every three (3) hours.
- _____ Disaster Response Assistant(s) survey and reports status of readiness every three (3) hours.
- _____ Airport Managers report daily status of readiness.

_____ Maintenance Manager shall report status of supplies and inventory daily.

_____ Tenant Advisory meetings are held twice a day.

Under Condition II Hurricane Watch (24 to 36 hours prior):

_____ Disaster Response Executive or his or her designated representative will ensure that all responsible parties are alerted.

_____ Disaster Monitor reports storm status of readiness every three (3) hours.

_____ Disaster Response Assistant(s) report status of readiness every three (3) hours

_____ Airport Managers report status of readiness every three (3) hours.

_____ Maintenance Manager shall report status of supplies and inventory every six (6) hours.

_____ Disaster Response Executive ensures secondary location is prepared and at proper status of readiness in the Emergency Command Center.

_____ All non-essential personnel are released as permitted by immediate supervisors.

_____ Tenant Advisory meetings are held twice a day.

Under Condition I Hurricane Warning (within 24 hours):

_____ Disaster Response Executive or his or her designated representative will ensure that all responsible parties are alerted.

_____ JAX is properly secured.

_____ Cecil Airport is properly secured.

_____ Herlong Airport is properly secured.

_____ JAXEX Airport is properly secured.

_____ Contractors are prepared.

_____ JAA Administration Building is properly secured.

_____ Police/Security is alerted.

_____ All areas are clear of personnel.

HURRICANE SUPPLIES

It is essential that each department keep a current inventory of the following supplies as a critical part in the success of the Hurricane Preparedness Program. Immediate access to these supplies requires that they be clearly labeled as "Hurricane Supplies" and the location of the hurricane supplies be communicated to employees.

Jacksonville International Airport (JIA):

All JIA supplies are currently being stored by the Operations Dept.

Facilities Department	
Supply Item(s)	Quantity
Flashlights, D-size and 6-volt	25
D-cell Flashlight Batteries	100
6-volt batteries	60
Spotlights, High Intensity	2
Coolers, (70 quart or larger)	4
Plastic stretch wrapping, (18" or 20" diameter)	10 rolls
Nylon Rope $\frac{3}{8}$ " or $\frac{1}{2}$ "	500'
Duct Tape	75 rolls
Plastic sheeting, (4 or 6mil -- 10'x100')	10 rolls
Rags (200 lbs)	200 lbs.
Water coolers (5 gallon)	4
Rain Gear and Boots, (various sizes)	5 sets
Folding cots	20
Blankets and pillows	20 sets
Bottled water	30 cases
Tarps 16'x20'	30
Large plastic garbage bags (45 gallon or larger)	10 cases
Gatorade (powder)	3 cases

Cecil Airport, Herlong Airport and JAXEX Airport

Supply Item(s)	Quantity
Flashlights	6
D-cell flashlight batteries	70
5 gallon jugs of water or equivalent	5
Nylon rope 3/8" or 1/2"	250 feet
Rolls of visquine	2
Plywood 1/2" x 4' x 8'	15 sheets
Rags	100 lbs.
Sets rain gear plus boots	3
Blow up mattresses with blanket and pillows	3
Rolls of duct tape	10
Sand bags	25
Hazard cones	25
Battery operated radio plus batteries	1
800 MHZ radio	3

IT Department

Supply Item(s)	Quantity
Rolls of duct tape	5
Rolls of masking tape	5
Rolls of visquine	10

JAX - HURRICANE PROCEDURES



Operations

The Director, JIA Operations has the primary responsibility of notifying the appropriate personnel in Airport Operations, Airport Security, Facilities Maintenance, JAX Police and JAX Tenants and of hurricane conditions and each change as it occurs. Additionally, the Director, JIA Operations will update the Disaster Response Assistants of readiness status during condition changes.

Areas and appointments are as follows:

Appointments	
JAX Terminal	Director, JIA Operations or his or her designated representative
Operations	Operations Supervisors
Facilities	Director of Facilities Building Engineer, Field Engineer
Security	Director of Public Safety & Security
Disaster Monitor	Risk Management

Under Condition IV Alert and III Readiness (48 to 72 hours prior):

Responsibility of **Director, JIA Operations**:

1. Instructs appropriate personnel to secure the JAX terminal and equipment.
2. Notifies all JAX tenants of conditions and changes and requests they secure their area of all loose objects such as pallets, trash cans, or any other objects that could become a missile during a hurricane.
3. Keeps Disaster Response Assistants informed of any changes.
4. Remains in close contact with the Disaster Response Assistants and JAX tenants.
5. Establishes the Emergency Operations Center (EOC) at JAX and determines appropriate manning levels.
6. Review Business Recovery Plan.
7. Meet with Tower Manager to determine expected and known operations and facility conditions.

8. With assistance from assigned personnel completes the following checklist and reports progress to the Disaster Response Assistants:
- ☐ Conduct staff and tenant meeting(s) and brief personnel on required actions, hurricane plan and possible storm preparations.
 - ☐ Verify assigned JAA personnel recall information.
 - ☐ Verify Tenant emergency contact information.
 - ☐ Verify contractor emergency contact information.
 - ☐ Inventory hurricane supplies, purchase extra/needed items.
 - ☐ Test generators and pumps inspect fuel levels.
 - ☐ Test emergency equipment.
 - ☐ Inspect all exterior storm water drains, ensure drains are debris free.
 - ☐ Inspect building gutters and drain fields, ensure fields are debris free.
 - ☐ Obtain & storm track status every six hours
 - ☐ Conduct an airport inspection (landside & airside) to measure the readiness and status of tenants.
 - ☐ Coordinate with Airport tenants operational & aircraft shelter intentions and operational hurricane readiness.
 - ☐ Inspect Airport for loose debris, trash cans removed, aircraft tie downs secure. Track and report any leasehold areas that may produce hazards.
 - ☐ Notify JAX tenants to expedite movement of hazardous waste generated from operations, offsite.
 - ☐ Coordinate hurricane conditions with contractors working on JAA property. Determine last work period and site securing conditions and plans.
 - ☐ Inspect emergency lighting batteries for charge, if needed, replace.
 - ☐ Purchase extra/needed emergency items in accordance with Procurement guidelines.
 - ☐ Refuel all vehicles and equipment.
 - ☐ Check and charge batteries on all radios.
 - ☐ Test back-up communications.
 - ☐ Coordinate the removal or storage of all Port-a-lets.
 - ☐ Restock/re-supply drinking water.
 - ☐ Verify employee availability, brief all employees on recall plan and on-call responsibility.
 - ☐ Brief employees on their family and home preparations.
 - ☐ Report condition status to Disaster Response Assistants.

Note: if an aircraft appears to be unsecured, the JAA employee will not attempt to secure it, he or she will advise the respective owner of the discrepancy.

Responsibility of Director, Facilities:

1. Checks pre-wiring for identified generators.
2. Notifies all contract electricians and plumbers that they are to be available after the hurricane has passed.
3. All doors and windows of the facility will be checked. All non-functional doors will be repaired as soon as possible.

4. Supervises the closing of all warehouse doors and the placing of sandbags behind the doors and the movement of equipment from low areas on the facility.
5. Collects all port-a-lets for storage in a warehouse.
6. All equipment will be gassed up and secured.
7. Remove all possible missile hazards and secure within facility. Expedite movement of hazardous waste offsite.

Under Condition II Watch (24 to 36 hours prior):

Responsibility of Director, JIA Operations:

1. Once notified by the Disaster Response Executive, the Director, JIA Operations will tour airport facilities to ensure all steps have been complied with, facilities secured, and is aware of anything not covered or that may result in a safety hazard.
2. Communicates to the Disaster Response Assistants when areas are secured.
3. Contact each tenant at the airport to determine personnel staying on-station, location and communications for the hurricane event, coordinate findings with JFRD Station, also, this will include a determination of security presences during hurricane event, location of guards and communications.
3. With assistance from assigned personnel completes the following checklist and reports progress to Disaster Response Assistants:
 - ❑ Notify airport personnel and tenants.
 - ❑ Obtain & track storm status every three (3) hours.
 - ❑ Verify tenants operational & aircraft storage intentions.
 - ❑ Re-inspect the airport for loose debris, trash cans removed, aircraft, fire extinguishers....
 - ❑ Secure all fuel vehicles that are not operationally required, ensure fuel securing devices and lines are properly stored.
 - ❑ Seal, tape or board up critical doors windows.
 - ❑ Establish recall/work schedule for next condition.
 - ❑ Assist tenants in preparations as necessary.
 - ❑ FAA/ATCT Coordination:
 - ❑ Coordinate tenant intentions with the ATCT and determine their operational status.
 - ❑ Review tower evacuation procedures and conditions (winds sustained 60mph +)
 - ❑ Coordinate with FAA on airspace procedures
 - ❑ Coordinate with ATCT of possible relief flight parking areas.
 - ❑ Issue plastic bags for computers, telephone and office equipment
 - ❑ Coordinate with the ATCT and FAA and tower evacuation procedures.
 - ❑ Verify status and ARFF protection times.

- ❑ Check status of JRFD station providing services to the Airport for manning and expected reduction in response due to extreme conditions during expected land fall and storms duration. Verify airport emergency/City communications channel (800mhz).
- ❑ Release nonessential employees as JAA Senior Management directs.
- ❑ Request assistance as required.

Reports condition status to Disaster Response Executive or his or her designated representative.

Under Condition I Warning (within 24 hours):

Responsibility of Director, JIA Operations:

1. Continues hurricane preparation activities and reports progress to Disaster Response Assistants.
2. With assistance from assigned personnel completes the following checklist and reports progress to Disaster Response Assistants:

Verify airport preparations:

- ❑ Landside
 - ❑ Terminal
 - ❑ Test communications
 - ❑ Ground Transportation
 - ❑ Remove loose and temporary signs
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
- ❑ Airside
 - ❑ Direct all tenants to secure all dumpsters and FOD containers
 - ❑ Conduct last storm water inspection/safety check (debris).
 - ❑ Aircraft
 - ❑ Fuel Facilities
 - ❑ Test communications
 - ❑ Remove loose and temporary signs
 - ❑ Secure jet bridges
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
- ❑ Buildings
 - ❑ Airside and Landside
 - ❑ Fire Support Systems
 - ❑ Emergency Generators
 - ❑ Verify all construction areas have been properly secured and all potentially dangerous items have been removed.

- ❑ Utilities
 - ❑ As determined, ensure all utilities are secured (water/gas) - Coordinate with JEA and Teco.
- ❑ Administration
 - ❑ Verify the status of all non-essential airport personnel.
 - ❑ Properly secure and protect administrative files/items
 - ❑ Ensure administrative personnel and offices have secured office areas
 - ❑ Hard copy and electronically save, operational data, master plans, construction plans and specs, badging and airport security information
- ❑ Activate hurricane supplies, as needed
- ❑ Request assistance as required.
- ❑ Reports condition status to Disaster Response Assistants.

Post Hurricane (All clear):

Responsibility of Director, JIA Operations:

1. With assistance from assigned personnel completes the following checklist and reports progress to Disaster Response Assistants:
 - ❑ Survey Airport and facilities for damage and determine the ability to return to normal operations and establish restoration priorities.
 - ❑ Check and if able, test airport equipment
 - ❑ Lightning
 - ❑ NAVAID status
 - ❑ Generators (electrical)
 - ❑ Fire systems
 - ❑ Vehicles
 - ❑ ATC facilities (if applicable)
 - ❑ Mowing equipment/vehicles
 - ❑ Record damages to JAA and tenants facilities (written and with photos).
 - ❑ Issue NOTAMs for all required deficiencies
 - ❑ Re-establish utilities, as needed
 - ❑ Re-establish administrative offices
 - ❑ Inventory hurricane supplies
 - ❑ Recall necessary employees for restoration phase.
 - ❑ If able, assist tenants
 - ❑ Report status of facilities and airport to the Disaster Response Assistants.

Responsibility of **Director of Safety and Security**:

- Conduct walk through of the terminal area including airline/tenant operations area.
- Report all damage found that needs immediate attention to communications.
(All other damage needs to be reported to operations.)
- Check the security of all perimeter gates, secure if necessary.
- Patrol all roadways for damages and/or blockage.
- Report all power outages.

HERLONG AIRPORT and JAXEX AIRPORT



HURRICANE PROCEDURES



Operations

The Chief of Cecil has the primary responsibility to notify the Herlong and JAXEX Airport Managers of hurricane conditions and each change as it occurs. Additionally, the Chief of Cecil will update the Disaster Response Executive of readiness status during condition changes.

Herlong/JAXEX respective airport manager has the primary responsibility to notify the appropriate personnel in airport operations and facilities of hurricane conditions and each change as it occurs. Additionally, the respective airport manager will update the Chief of Cecil of readiness status during condition changes.

Under Condition IV Alert and III Readiness (48 to 72 hours prior):

Responsibility of Chief of Cecil:

1. Directs the implementation of the Herlong/JAXEX airport hurricane preparation efforts.
2. Keeps Disaster Response Executive informed of any changes.
3. Manages the current weather data and informational flow to the appropriate airport personnel.
4. Contact each tenant at the airport to determine personnel staying on-station, location and communications for the hurricane event, coordinate findings with JFRD (if applicable), also, this will include a determination of security presences during hurricane event, location of guards and communications.
6. Review Business Recovery Plan.
7. Meet with Tower Manager (if applicable) to determine expected and known operations and facility conditions.
8. Coordinates with the Disaster Response Executive to mitigate property and equipment damage to the "Jacksonville Airport System".

Responsibility of Herlong/JAXEX **Airport Managers:**

1. Directs the implementation of hurricane preparations.
2. Keeps the Chief of Cecil informed on condition IV and III preparations progress.
3. Completes the following checklist and reports progress to Chief of Cecil:
 - ❑ Conduct a staff meeting and brief personnel on required actions, hurricane plan and possible storm preparations
 - ❑ Verify JAA personnel recall information
 - ❑ Verify Tenant emergency contact information
 - ❑ Verify contractor emergency contact information.
 - ❑ Inventory hurricane supplies, purchase extra/needed items.
 - ❑ Test generators and pumps inspect fuel levels.
 - ❑ Schedule fuel service to ensure all tanks are full.
 - ❑ Test emergency equipment.
 - ❑ Inspect all exterior storm water drains, ensure drains are debris free.
 - ❑ Inspect building gutters and drain fields, ensure fields are debris free.
 - ❑ Obtain & track storm status every six hours
 - ❑ Conduct an airport inspection (landside & airside) to measure the readiness and status of tenants.
 - ❑ Coordinate with airport tenants regarding operational & aircraft shelter intentions and operational hurricane readiness.
 - ❑ Inspect airports for loose debris, trash cans removed, aircraft tie downs secure. Track and report any leasehold areas that may produce hazards.
 - ❑ Notify tenants to expedite movement of hazardous waste generated from operations, offsite.
 - ❑ Coordinate hurricane conditions with contractors working on JAA property, determine last work period and site securing conditions and plans.
 - ❑ Coordinate with COJ and JEDC and contractors working near JAA property, ensure plans are being taken to secure work sites.
 - ❑ Inspect emergency lighting batteries for charge, if needed, replace.
 - ❑ Purchase extra/needed emergency items in accordance with Procurement guidelines.
 - ❑ Refuel all vehicles and equipment.
 - ❑ Check and charge batteries on all radios.
 - ❑ Test back-up communications.
 - ❑ Coordinate the removal or storage of all Port-a-lets.
 - ❑ Restock/re-supply drinking water.
 - ❑ Verify employee availability, brief all employees on recall plan and on-call responsibility.
 - ❑ Brief employees on their family and home preparations.

Note: if an aircraft appears to be unsecured, JAA will not attempt to secure it, he or she will advise the FBO/Owner of the discrepancy.

Responsibility of **Operations / Facilities Maintenance Personnel:**

1. Assist the Airport Manager in completing preparation checklist.

Under Condition II Watch (24 to 36 hours prior):

Responsibility of **Chief of Cecil:**

1. Continues to keep Disaster Response Executive informed of any changes.

Responsibility of **Airport Managers:**

1. Continues to direct the implementation of hurricane preparations.
2. Communicates with the Chief of Cecil on condition II preparations progress.
3. Completes the following checklist and reports progress to Chief of Cecil:
 - ❑ Notify airport personnel and tenants.
 - ❑ Obtain & track storm status every three hours.
 - ❑ Verify tenants operational & aircraft storage intentions.
 - ❑ Re-inspect the airports for loose debris, trash cans removed, aircraft, fire bottles...
 - ❑ Secure all fuel vehicles that are not operationally required, ensure fuel securing devices and lines are properly stored.
 - ❑ Seal, tape or board up critical doors windows.
 - ❑ Establish recall/work schedule for next condition.
 - ❑ Assist tenants in preparations as necessary.
 - ❑ FAA/ATCT Coordination:
 - ❑ Coordinate tenant intentions with the ATCT and determine their operational status.
 - ❑ Review tower evacuation procedures and conditions (winds sustained 48mph +)
 - ❑ Coordinate with FAA on airspace procedures
 - ❑ Coordinate with ATCT on possible relief flight parking areas.
 - ❑ Issue plastic bags for computers, telephone and office equipment
 - ❑ Coordinate with the ATCT and FAA concerning tower evacuation procedures.
 - ❑ Check status of JRFD station providing services to the airport for manning and expected reduction in response due to extreme conditions during expected land fall and storms duration. Verify airport emergency/City communications channel (800mhz).
 - ❑ Release nonessential employees as JAA Senior Management directs.
 - ❑ Request assistance as required.

Reports condition status to Chief of Cecil.

Responsibility of **Operations / Facilities Maintenance Personnel:**

1. Assist the Airport Manager in completing preparation checklist.

Under Condition I Warning (within 24 hours):

Responsibility of **Chief of Cecil:**

1. Continues to keep Disaster Response Executive informed of any changes.

Responsibility of Herlong/JAXEX **Airport Managers:**

1. Continues to direct and finalize hurricane preparations.
2. Communicates with the Chief of Cecil on Condition I preparations progress.
3. Completes the following checklist and reports progress to Chief of Cecil:

Verify airport preparations:

- ❑ Landside
 - ❑ Terminal
 - ❑ Ground Transportation
 - ❑ Remove loose and temporary signs
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
 - ❑ Secure dumpsters (tenant and JAA)
 - ❑ Lower and store flags
- ❑ Airside
 - ❑ Direct all tenants to secure all dumpsters and FOD containers
 - ❑ Conduct last storm water inspection/safety check (debris).
 - ❑ Aircraft
 - ❑ Fuel Facilities
 - ❑ Remove loose and temporary signs
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
 - ❑ Ensure wash racks are switched to storm water
 - ❑ Stage airside recovery equipment
- ❑ Buildings
 - ❑ Airside and Landside
 - ❑ Fire Support Systems
 - ❑ Emergency Generators
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
- ❑ Utilities

- ❑ As determined, ensure all utilities are secured (water/gas) - Coordinate with JEA and Teco.
- ❑ Administration
 - ❑ Verify the status of all non-essential airport personnel.
 - ❑ Properly secure and protect administrative files/items
 - ❑ Ensure administrative personnel and offices have secured office areas
 - ❑ Hard copy and electronically save, operational data, master plans, construction plans and specs, badging and airport security information
- ❑ Activate hurricane supplies, as needed
- ❑ Request assistance as required.
- ❑ Reports condition status to Chief of Cecil.

Post Hurricane (All clear):

Responsibility of Chief of Cecil:

1. With assistance from assigned personnel completes the following checklist and reports progress to Disaster Response Executive:
 - ❑ Survey airport & facilities for damage and determine the ability to return to normal operations and establish restoration priorities.
 - ❑ Check and test (if able) airport equipment
 - ❑ Lightning
 - ❑ NAVAID status
 - ❑ Generators (electrical)
 - ❑ Fire systems
 - ❑ Vehicles
 - ❑ ATC facilities (if applicable)
 - ❑ Mowing equipment/vehicles
 - ❑ Record damages to JAA and tenants facilities (written and with photos).
 - ❑ Issue NOTAMs for all required deficiencies.
 - ❑ Re-establish utilities, as needed.
 - ❑ Reestablish administrative offices.
 - ❑ Inventory hurricane supplies
 - ❑ Recall necessary employees for restoration phase.
 - ❑ If able, assist tenants.

CECIL AIRPORT



HURRICANE PROCEDURES

Operations

The Chief of Cecil has the primary responsibility to notify the Cecil Airport Manager of hurricane conditions and each change as it occurs. Additionally, the Chief of Cecil will update the Disaster Response Executive of readiness status during condition changes.

The respective airport manager has the primary responsibility to notify the appropriate personnel in airport operations and facilities of hurricane conditions and each change as it occurs. Additionally, the airport manager will update the, Chief of Cecil of readiness status during condition changes.

Under Condition IV Alert and III Readiness (48 to 72 hours prior):

Responsibility of Chief of Cecil:

1. Directs the implementation of Cecil hurricane preparation efforts.
2. Keeps Disaster Response Executive informed of any changes.
3. Manages the current weather data and informational flow to the appropriate airport personnel.
4. Contact each tenant at the airport to determine personnel staying on-station, location and communications for the hurricane event, coordinate findings with JFRD, also, this will include a determination of security presences during hurricane event, location of guards and communications.
5. Review Business Recovery Plan.
6. Meets with Tower Manager to determine expected and known operations and facility conditions.
7. Coordinates with the Disaster Response Executive to mitigate property and equipment damage to the "Jacksonville Airport System".

Responsibility of Cecil Airport, Airport Manager:

1. Directs the implementation of hurricane preparations.
2. Keeps the Chief of Cecil informed on condition IV and III preparations progress.

3. Completes the following checklist and reports progress to Chief of Cecil:
- ☐ Conduct a staff meeting and brief personnel on required actions, hurricane plan and possible storm preparations.
 - ☐ Verify JAA personnel recall information.
 - ☐ Verify Tenant emergency contact information.
 - ☐ Verify contractor emergency contact information.
 - ☐ Inventory hurricane supplies, purchase extra/needed items.
 - ☐ Test generators and pumps inspect fuel levels.
 - ☐ Schedule fuel service to ensure all tanks are full.
 - ☐ Test emergency equipment.
 - ☐ Inspect all exterior storm water drains, ensure drains are debris free.
 - ☐ Inspect building gutters and drain fields, ensure fields are debris free.
 - ☐ Obtain & track storm status every six hours.
 - ☐ Conduct an airport inspection (landside & airside) to measure the readiness and status of tenants.
 - ☐ Coordinate with airport tenants regarding operational & aircraft shelter intentions and operational hurricane readiness.
 - ☐ Inspect airports for loose debris, trash cans removed, aircraft tie downs secure. Track and report any leasehold areas that may produce hazards.
 - ☐ Notify tenants to expedite movement of hazardous waste generated from operations, offsite.
 - ☐ Coordinate hurricane conditions with contractors working on JAA property, determine last work period and site securing conditions and plans.
 - ☐ Coordinate with COJ and JEDC and contractors working on near JAA property, ensure plans are being taken to secure work sites.
 - ☐ Inspect emergency lighting batteries for charge, if needed, replace.
 - ☐ Purchase extra/needed emergency items in accordance with Procurement guidelines.
 - ☐ Refuel all vehicles and equipment.
 - ☐ Check and charge batteries on all radios.
 - ☐ Test back-up communications.
 - ☐ Coordinate the removal or storage of all Port-a-lets.
 - ☐ Restock/re-supply drinking water.
 - ☐ Verify employee availability, brief all employees on recall plan and on-call responsibility.
 - ☐ Brief employees on their family and home preparations.
 - ☐ Reports condition status to the Chief of Cecil.

Note: if an aircraft appears to be unsecured, JAA will not attempt to secure it, he or she will advise the FBO/Owner of the discrepancy.

Responsibility of **Operations / Facilities Maintenance Personnel:**

1. Assist the Airport Manager in completing preparation checklist.

Under Condition II Watch (24 to 36 hours prior):

Responsibility of **Chief of Cecil:**

1. Continues to keep Disaster Response Executive informed of any changes.

Responsibility of Cecil Airport, **Airport Manager:**

1. Continues to direct the implementation of hurricane preparations.
2. Communicates with the Chief of Cecil on condition II preparations progress.
3. Completes the following checklist and reports progress to Chief of Cecil:
 - ☐ Notify airport personnel and tenants.
 - ☐ Obtain & track storm status every three hours.
 - ☐ Verify tenants operational & aircraft storage intentions.
 - ☐ Re-inspect the airports for loose debris, trash cans removed, aircraft, fire bottles...
 - ☐ Secure all fuel vehicles that are not operationally required, ensure fuel securing devices and lines are properly stored.
 - ☐ Seal, tape or board up critical doors windows.
 - ☐ Establish recall/work schedule for next condition.
 - ☐ Assist tenants in preparations as necessary.
 - ☐ Coordinate tenant intentions with the ATCT and determine their operational status.
 - ☐ Review tower evacuation procedures and conditions (winds sustained 48mph +)
 - ☐ Coordinate with FAA on airspace procedures
 - ☐ Coordinate with ATCT on possible relief flight parking areas.
 - ☐ Issue plastic bags for computers, telephone and office equipment
 - ☐ Coordinate with the ATCT and FAA concerning tower evacuation procedures.
 - ☐ Check status of JRFD station providing services to the airport for manning and expected reduction in response due to extreme conditions during expected land fall and storms duration. Verify airport emergency/City communications channel (800mhz).
 - ☐ Release nonessential employees as JAA Senior Management directs.
 - ☐ Request assistance as required.

Reports condition status to Chief of Cecil.

Responsibility of Cecil Airport **Operations / Facilities Maintenance Personnel:**

1. Assist the Airport Manager in completing preparation checklist.

Under Condition I Warning (within 24 hours):

Responsibility of Chief of Cecil:

1. Continues to keep Disaster Response Executive informed of any changes.

Responsibility of Cecil Airport, Airport Manager:

1. Continues to direct and finalize hurricane preparations.
2. Communicates with the Chief of Cecil on Condition I preparations progress.
3. Completes the following checklist and reports progress to Chief of Cecil

Verify airport preparations:

- ❑ Landside
 - ❑ Terminal
 - ❑ Ground Transportation
 - ❑ Remove loose and temporary signs
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
 - ❑ Secure dumpsters (tenant and JAA)
 - ❑ Lower and store flags
- ❑ Airside
 - ❑ Determine what tenant(s) will have personnel on site during the storm:
 - ❑ # of personnel
 - ❑ Location
 - ❑ Phone #'s
 - ❑ Direct all tenants to secure all dumpsters and FOD containers
 - ❑ Conduct last storm water inspection/safety check (debris).
 - ❑ Aircraft
 - ❑ Fuel Facilities
 - ❑ Remove loose and temporary signs
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.
 - ❑ Ensure wash racks are switched to storm water
 - ❑ Stage airside recovery equipment
- ❑ Buildings
 - ❑ Airside and Landside
 - ❑ Fire Support Systems
 - ❑ Emergency Generators
 - ❑ Verify all construction areas have been properly secured and all loose items have been removed.

- ❑ Utilities
 - ❑ As determined, ensure all utilities are secured (water/gas) - Coordinate with JEA and Teco.
- ❑ Administration
 - ❑ Verify the status of all non-essential airport personnel.
 - ❑ Properly secure and protect administrative files/items.
 - ❑ Ensure administrative personnel and offices have secured office areas.
 - ❑ Hard copy and electronically save, operational data, master plans, construction plans and specs, badging and airport security information.
- ❑ Activate hurricane supplies, as needed
- ❑ Request assistance as required.
- ❑ Reports condition status to Chief of Cecil.

Post Hurricane (All clear):

Responsibility of **Chief of Cecil:**

1. With assistance from assigned personnel completes the following checklist and reports progress to Disaster Response Executive:
 - ❑ Survey airport & facilities for damage and determine the ability to return to normal operations and establish restoration priorities.
 - ❑ Check and test (if able) airport equipment
 - ❑ Lightning
 - ❑ NAVAID status
 - ❑ Generators (electrical)
 - ❑ Fire systems
 - ❑ Vehicles
 - ❑ ATC facilities (if applicable)
 - ❑ Mowing equipment/vehicles
 - ❑ Record damages to JAA and tenants facilities (written and with photos).
 - ❑ Issue NOTAMs for all required deficiencies.
 - ❑ Re-establish utilities, as needed.
 - ❑ Reestablish administrative offices.
 - ❑ Inventory hurricane supplies.
 - ❑ Recall necessary employees for restoration phase.
 - ❑ If able, assist tenants.

Report status of facilities and airport to the Chief of Cecil.

OFFICE WORKER - GENERAL PROCEDURES

Under Condition II Watch (24 to 36 hours prior):

Release selected Personnel, if possible.

All other remaining Personnel:

1. Verify windows are taped, doors are secured and exterior debris and supplies are secured.
2. All blinds and exterior doors are closed and secured.
3. All desks, files, tables and bookcases are moved away from windows where practical.
4. Raise up off floor all papers, drawings and books that are stored in desks away from windows. Papers, drawings and books are stored in desks away from window.
5. Backup your computer files on your PC to the server. Only store vital data, otherwise the system may be overwhelmed.
6. Unplug all electrical machines and appliances.
7. Telephones, and portable office machines are stored in desks or cabinets, if possible, or are covered with plastic and taped and stored in an elevated place away from windows.
8. Computer and copier equipment to be wrapped with plastic visquine and taped (supplies available from the IT Department).
9. If practical, material is moved off floor to some elevated place to prevent water damage.

RESPONSIBILITIES OF CONTRACTORS:

Under the contract terms, **contractors** are responsible for the protection of all unfinished construction or demolition work and responsible for securing construction material or equipment that may become wind-borne. Risk Management will verify compliance.

Under Condition IV Alert (72 hours prior):

1. When this condition is ordered by JAA Engineering, the following actions will be taken:

- A. **Contractors** must have, on the job site, sufficient hurricane gear such as ropes, stakes, slings, shackles, visquine, waterproof tape and tarpaulins to securely fasten tools and equipment.
 - B. Job sites shall be cleared of all waste material that may become windborne. All trash and debris must be immediately removed from JAA property.
- 2. Verify equipment on hand, i.e., flashlights, spare flashlight batteries, rain gear, including boots, safety belt harnesses, spare batteries for cellular phones and portable radios, visquine and masking tape.
 - 3. Ensure all propane tank valves are secure at the tank.

Under Condition III Readiness (48 hours prior):

- 1. When this condition is ordered by JAA Engineering, the following actions will be taken:
 - A. The **contractor** will check his hurricane gear to be certain that sufficient gear is on hand so that every item of material that could become windborne can be securely tied down on short notice.
 - B. Loose construction materials will be secured within construction trailers or removed to an off-site warehouse whenever possible.
 - C. **Contractors** must arrange to have sufficient laborers on call to come out if Condition II is ordered.

Under Condition II Watch (24 to 36 hours prior):

- 1. When this condition is ordered by JAA Engineering, the following actions will be taken:
 - A. The **contractor** will make such preparations as to enable all construction work to be completely secured within twelve (12) hours.
 - B. All materials not immediately required for securing the construction will be removed or securely tied down.
 - C. All openings will be closed and secured except those necessary to permit access to the work presently underway.
 - D. A **standby party** shall be organized, whenever possible, consisting of a **foreman, journeyman**, and/or **laborers** to ascertain all of the above actions are adhered to and other trailers/areas are properly prepared.
 - E. **Contractor** will continue working until directed to completely secure.

- F. Cover all equipment with two 2 layers of 6 mil visquine and secure with duct tape.

The final phase for Engineering under Condition II (24 to 36 hours prior):

1. The JAA **Director of Planning and Engineering** will order the complete shut-down of the contract work when the hurricane is expected to reach the local area within twenty-four (24) hours. When the Chief orders "Complete Security", the following instructions are effective immediately:
 - A. Stop all construction work and completely secure the project.
 - B. The **contractor** will immediately use all of his personnel (personnel to be supplemented if required) to secure all material that may become wind-borne or dispersed by high winds. Lumber and materials are to be piled in compact piles, tied down securely by means of 2 X 4 stakes in the ground (a minimum of 30 inches) or metal screw anchors, and tied across with ropes; store in trailers wherever possible.
 - C. Disconnect temporary electrical services on site and secure at main disconnect.
 - D. Maintain a working party until released by the **Director of Planning and Engineering**.
 - E. When destructive winds of force indicated are imminent, evacuate site of all personnel and mobile equipment.

FINANCE & ADMINISTRATION DEPARTMENTS HURRICANE PROCEDURES

The **Chief Financial Officer** has the responsibility to provide the assistance to facilitate necessary financial needs/ transactions.

General Instructions - All Conditions:

The **Chief Financial Officer (CFO)** is responsible for the following:

1. Provides sufficient funding to support the purchasing needs required by all departments in the preparation and recovery for a hurricane or natural disaster.
2. Provides security for those cash funds necessary during period when normal banking operations are disrupted.
2. Provides interim payroll functions to assist employees during a hurricane or other disaster.
3. Notifies the appropriate personnel of hurricane conditions and each change as it occurs.

The **Chief Financial Officer** has the responsibility to provide the assistance to facilitate necessary administration needs/ transactions.

General Instructions - All Conditions:

The **Director of Procurement** is responsible for the following:

PROCUREMENT DEPARTMENT HURRICANE PROCEDURES

The Procurement Department, prior to any hurricane status, is responsible for the following:

1. Purchase all goods and services identified on the “Emergency Preparedness Inventory List” (Note: the items can only be procured after an approved requisition has been received.)
2. The rental or purchase of requisitioned power tools deemed necessary by operating departments, (i.e. chain saws, pumps, air compressors, possible day labor to help with procedures, etc.).
3. Arrange alternative purchasing capabilities, to ensure ability to continue operations as necessary after a hurricane.

DEPARTMENT OF TECHNOLOGY HURRICANE PROCEDURES

The **Director of Information Technology** is responsible for Information Technology and the He/She notifies the appropriate personnel of hurricane conditions and changes as they occur.

Under Condition IV / Alert (72 hours prior):

1. Set up daily recurring Meeting/conference call for duration of storm and post-storm.
2. Establish bridge line if necessary and provide call in number and password.
3. Convene staff meeting, and determine level of response based on current situation.
4. Notify essential personnel, determine shift rotations, and determine Incident Response lead.
5. Notify Executive Management Team and business unit directors of IT plan, and ensure no additional support is needed.
6. Information Technology personnel will be notified concerning incident/hurricane procedures.

7. Ensure that all IT vehicles are topped off daily.
8. PC Support to confirm locations of staging areas requiring support.
9. Information Technology personnel will be instructed to begin appropriate family and home preparations.
10. Information Technology personnel will be provided materials to secure their equipment from water damage.
11. Identify department storm riders for this incident and update the Emergency Staffing Plan.
12. Confirm the employee release policy for this storm.
13. Set communication protocols such as requirements to carry cell phones.
14. Normal work schedules are maintained.

Under Condition III / Readiness (48 hours prior):

1. Make final updates to the Emergency Staffing Plan with the work schedule hours if necessary and distribute to all Information Technology personnel.
2. Administrative leave is authorized for department storm riders to make appropriate family and home preparations if the data center is to remain operational.
3. Take full systems back-ups.
4. Department storm riders are instructed what time and location to report back and released, as directed by JAA management.

Under Condition II / Watch (24 to 36 hours prior):

1. Decision is made if data center is to be shut down and if not emergency work hours are identified.
2. Information Technology personnel will secure office documents and equipment away from possible damage.
3. Take incremental system back-ups.
4. If the decision was made to shutdown systems an orderly shutdown will begin, all non-essential Information Technology employees will be released when shutdown is complete.
5. If the decision was to not shutdown systems all Information Technology personnel except storm riders will be released when the evacuation order from JAA is received.

During Storm:

1. Identify and document network and computer equipment damage, including cost to repair or replace, after being given the OK to enter facilities.
2. Incident Action Plan is developed to repair/replace damaged equipment as necessary.
3. Evaluate with facilities the availability of power / generation, and decide if systems should be available.
4. Check in a minimum of every four hours, or as needed.
5. Communications will be by phone (bridge line) or e-mail.
6. Send out situation updates to executive management and department heads every four hours.

After Storm:

1. Triage any remaining repairs.
2. All Department of Technology employees return to work upon request.
3. If data center was shut down, begin orderly restoration of systems.
4. Provide systems situation updates to executive management team and department heads every four hours until restoration is complete.

HUMAN RESOURCES DEPARTMENT HURRICANE PROCEDURES

The Human Resources Department is responsible for the following:

1. Review and update the JAA employee recall roster.

EXTERNAL AFFAIRS HURRICANE PROCEDURES

External Affairs is responsible for providing timely and important information about the JAA and its airports to the media during a disaster, and to maintain communication with the airline industry affecting airline operations.

Under Condition IV Alert and III Readiness (48 to 72 hours prior):

1. Issue a communication alerting the airline community that conditions exist for a tropical storm that may develop into a hurricane and threaten the Jacksonville area.
2. Coordinate with media outlets to provide pertinent airport information, i.e., scrolling information, etc.
3. Issue other pertinent information for storm preparedness.

Under Condition II Watch (24 to 36 hours prior):

1. Issue a release alerting the airline community of the impending arrival of a hurricane within 24 to 36 hours. Shipping, trucking and rail lines should be asked to divert cargo to other areas.
2. Alert airline community of disaster plans and evacuation routes.
3. Coordinate with media outlets to provide pertinent airport information, i.e., scrolling information, etc.

Under Condition I Warning (24 hours prior):

1. Issue a communication alerting the aviation community that the National Weather Service advises there is a hurricane arriving in less than twenty four (24) hours.
2. External Affairs should assist the JAA by communicating airport emergency plans to the media outlets to ensure that current and correct information is disseminated.
3. Multiple sets of mailing lists should be obtained and stored in safe area for later communications.

Post - Hurricane:

1. As soon as safety permits, daily releases should be issued to the aviation industry advising of damages incurred to airport facilities. Airline interests should be updated frequently on expectation of commencing airport operations.

RESUMPTION OF BUSINESS ASSESSMENT BY DISASTER RECOVERY TEAM:

- _____ Disaster Recovery Team members will check-in at AOCC
- _____ Supplies will be issued and team assignments made. (radio's, rain coats, boots, forms, etc.)
- _____ Teams will review assigned areas and complete checklist for damage assessment.
- _____ Checklist forms will be turned in to the Airport Manager, JAX at the AOCC.
- _____ Facilities Manager will inventory damage and provide information to Airport Manager, JAX.
- _____ Disaster Recovery Team members will meet to review data and determine recommended date for resumption of operations.

- _____ Disaster Recovery Team will forward recommendation to the Executive Director or his or her designated representative.
- _____ Executive Director or his or her designated representative will issue order on date for resumption of operations.
- _____ Director, External Affairs will provide information to Staff and the General Public through various forms of media.

DEFINITIONS OF HURRICANE CONDITION

(Standard Federal Designations)

NOTE: The Hurricane Alert Condition (IV) is automatically set annually beginning June 1st and remains in effect through November 30th, unless otherwise directed by the U.S. Coast Guard District Commander.

CONDITION IV - HURRICANE ALERT

"Hurricane Alert/Condition IV" is issued when conditions exist for a tropical storm to develop into a hurricane, which could threaten the coastal mainland of Florida. Hurricane force winds are indicated within 72 hours.

CONDITION III - HURRICANE READINESS

"Hurricane Readiness/Condition III" exists when the National Weather Service advises that there is a threat of hurricane force winds within 48 hours.

CONDITION II - HURRICANE WATCH

"Hurricane Watch/Condition II" exists when the National Weather Service advises that there is a threat of a hurricane arriving in 24 to 36 hours.

CONDITION I - HURRICANE WARNING

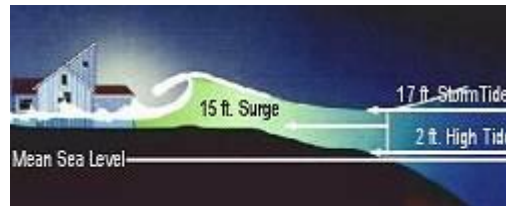
"Hurricane Warning/Condition I" **(Maximum Preparedness)** exists when the National Weather Service advises that a hurricane will strike within 24 hours.

Appendix B

HURRICANE SCALE		
Type of Storm	Winds	Damage
Tropical Storm	39-73 mph	
Category 1 Hurricane	74-95 mph (64-82 knots)	<i>Very dangerous winds will produce some damage.</i> No real damage to buildings. Damage to unanchored mobile homes. Some damage to poorly constructed signs. Also, some coastal flooding and minor pier damage. - Examples: Dolly 2008, Gaston 2004
Category 2 Hurricane	96-110 mph (83-95 knots)	<i>Extremely dangerous winds will cause extensive damage</i> Some damage to building roofs, doors and windows. Considerable damage to mobile homes. Flooding damages piers and small craft in unprotected moorings may break their moorings. Some trees blown down. - Examples: Isabel 2003, Frances 2004
Category 3 Hurricane	111-130 mph (96-113 knots)	<i>Devastating damage will occur</i> Some structural damage to small residences and utility buildings. Large trees blown down. Mobile homes and poorly built signs destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland. - Examples: Jeanne and Ivan 2004
Category 4 Hurricane	131-155 mph (114-135 knots)	<i>Catastrophic damage will occur</i> More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland. - Examples: Charlie 2004, Dennis 2005
Category 5 Hurricane	156 mph + (135+ knots)	<i>Catastrophic damage will occur</i> Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required. - Examples: Gilbert 1988, Camille 1992, Andrew 1992

The following section serves to provide background information on the following Hurricane hazards: Storms Surge, Inland Flooding, High Winds and Tornadoes. To plan and prepare for future weather events, we must look at and learn from the past.

STORM SURGE



"The greatest potential for loss of life related to a hurricane is from the storm surge."

- Brian Jarvinen, National Hurricane Center

Storm surge is simply water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level fifteen (15) feet or more. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides. Because much of the United States' densely populated Atlantic and Gulf Coast coastlines lie less than ten (10) feet above mean sea level, the danger from storm tides is tremendous.

The level of surge in a particular area is also determined by the slope of the continental shelf. A shallow slope off the coast will allow a greater surge to inundate coastal communities. Communities with a steeper continental shelf will not see as much surge inundation, although large breaking waves can still present major problems. Storm tides, waves, and currents in confined harbors severely damage ships, marinas, and pleasure boats.

In general, the more intense the storm, and the closer a community is to the right-front quadrant, the larger the area that must be evacuated. The problem is always the uncertainty about how intense the storm will be when it finally makes landfall. Emergency managers and local officials balance that uncertainty with the human and economic risks to their community. This is why a rule of thumb for emergency managers is to plan for a storm one category higher than what is forecast. This is a reasonable precaution to help minimize the loss of life from hurricanes.

Wave and current action associated with the tide also causes extensive damage. Water weighs approximately 1,700 pounds per cubic yard; extended pounding by frequent waves can demolish any structure not specifically designed to withstand such forces.

The currents created by the tide combine with the action of the waves to severely erode beaches and coastal highways. Many buildings withstand hurricane force winds until their foundations, undermined by erosion, are weakened and fail.

In estuaries and bayous, intrusions of salt water endanger the public health and send animals, such as snakes, to flee from flooded areas and take refuge in urban areas. The following chart shows the maximum height in feet above mean sea level that storm surge is predicted, according to the National Weather Service Storm Surge Atlas:

Storm Surge Atlas		
Storm Category	Downtown Jacksonville	Fernandina Beach
One	2.3 feet	4.6 feet
Two	3.5 feet	8.1 feet
Three	5.2 feet	11.4 feet
Four	16.5 feet	14.4 feet
Five	17.3 feet	17.6 feet

INLAND FLOODING

"In the last thirty (30) years, inland flooding has been responsible for more than half the deaths associated with tropical cyclones in the United States."

-Ed Rappaport, National Hurricane Center

Consider the following:

When it comes to hurricanes, wind speeds do not tell the whole story. Hurricanes produce storm surges, tornadoes, and often the most deadly of all - inland flooding. While storm surge is always a potential threat, more people have died from inland flooding in the last thirty (30) years. Intense rainfall is not directly related to the wind speed of tropical cyclones. In fact, some of the greatest rainfall amounts occur from weaker storms that drift slowly or stall over an area.

Inland flooding can be a major threat to communities hundreds of miles from the coast as intense rain falls from these huge tropical air masses. Tropical Storm Allison (2001) produced extremely heavy rainfall and catastrophic floods in the Houston, Texas area. Allison then acquired subtropical characteristics and continued to produce heavy rainfall and flooding near its track from Louisiana eastward to North Carolina, and then northward along the U.S. east coast to Massachusetts. Forty-one deaths were directly related to the heavy rain, flooding, tornadoes, and high surf. Damage estimates reported by the Federal Emergency Management Agency (FEMA) were near Five (5) billion dollars, with approximately \$4.8 billion in the Houston metropolitan area alone Hurricane Floyd (1999) brought intense rains and record flooding to the Eastern U.S. Of the fifty-six (56) people who perished, fifty (50) drowned due to inland flooding.

Tropical Storm Alberto (1994) drifted over the Southeast United States and produced torrential rainfall. More than twenty-one (21) inches of rain fell at Americus, Georgia. Thirty-three (33) people drowned. Damages exceeded \$750 million. Tropical Storm Claudette (1979) brought forty-five (45) inches of rain to an area near Alvin, Texas, contributing to more than \$600 million in damages. Hurricane Agnes (1972) produced floods in the Northeast United States which contributed to one hundred twenty-two (122) deaths and \$6.4 billion in damages. Long after the winds from Hurricane Diane (1955) subsided, the storm brought inland flooding to Pennsylvania, New York, and New England contributing to nearly two hundred (200) deaths and \$4.2 billion in damages.

Freshwater floods accounted for more than half (59%) of U.S. tropical cyclone deaths over the past thirty (30) years. These floods are why 63% of U.S. tropical cyclone deaths during that period occurred in inland counties.

At least 23% of U.S. tropical cyclone deaths occur to people who drown in, or attempting to abandon, their cars. 78% of children killed by tropical cyclones drowned in freshwater floods. So, the next time you hear hurricane -- think inland flooding!

HIGH WINDS

The intensity of a land falling hurricane is expressed in terms of categories that relate wind speeds and potential damage. According to the Saffir-Simpson Hurricane Scale, a Category 1 Hurricane has lighter winds compared to storms in higher categories. **A Category 4 Hurricane** would have winds between 131 and 155 mph and, on the average, would usually be expected to **cause 100 times the damage of the Category 1 Storm**. Depending on circumstances, less intense storms may still be strong enough to produce damage, particularly in areas that have not prepared in advance.



Tropical storm-force winds are strong enough to be dangerous to those caught in them. For this reason, emergency managers plan on having their evacuations complete and their personnel sheltered **before the onset of tropical storm-force winds**, not hurricane-force winds.

Hurricane-force winds can easily destroy poorly constructed buildings and mobile homes. Debris such as signs, roofing material, and small items left outside become flying missiles in hurricanes. Extensive damage to trees, towers, water and

underground utility lines (from uprooted trees), and fallen poles cause considerable disruption. High-rise buildings are also vulnerable to hurricane-force winds, particularly at the higher levels since wind speed tends to increase with height. Recent research suggests people should stay below the tenth floor, but still above any floors at risk for flooding. It is not uncommon for high-rise buildings to suffer a great deal of damage due to windows being blown out. Consequently, the areas around these buildings can be very dangerous.

The strongest winds usually occur in the right side of the eye-wall of the hurricane. Wind speed usually decrease significantly within twelve (12) hours after landfall. Nonetheless, **winds can stay above hurricane strength well inland.** Hurricane Hugo (1989), for example, battered Charlotte, North Carolina (which is 175 miles inland) with gusts to nearly 100 mph.

TORNADOS

Hurricanes can also produce tornadoes that add to the storm's destructive power. Tornadoes are most likely to occur in the **right-front quadrant** of the hurricane. However, they are also often found elsewhere **embedded in the rainbands**, well away from the center of the hurricane.

Some hurricanes seem to produce no tornadoes, while others develop multiple ones. Studies have shown that more than half of the land falling hurricanes produce at least one (1) tornado; Hurricane Buelah (1967) spawned one hundred and forty-one (141) according to one study. In general, tornadoes associated with hurricanes are less intense than those that occur in the Great Plains (see the Fujita Intensity Scale below). Nonetheless, the effects of tornadoes, added to the larger area of hurricane-force winds, can produce substantial damage.

There is no way at present to predict exactly which storms will spawn tornadoes or where they will touch down. The new Doppler radar systems have greatly improved the forecaster's warning capability, but the technology usually provides lead times from only a few minutes up to about thirty (30) minutes. Consequently, **preparedness is critical.**

Tornado Facts

When associated with hurricanes, tornadoes are not usually accompanied by hail or a lot of lightning, clues that citizens in other parts of the country watch for. Tornado production can occur for days after landfall when the tropical cyclone remnants maintain an identifiable low pressure circulation. They can also develop at any time of the day or night during landfall. However, by 12 hours after landfall, tornadoes tend to occur mainly during daytime hours.

Fujita Scale*		
Tornado Scale	Winds	Damage
F0 Gale Tornado	40-72 mph	Some damage to chimneys. Tree branches broken off. Shallow rooted trees uprooted.
F1 Moderate Tornado	73-112 mph	Peels surface off roofs. Mobile homes overturned. Moving autos pushed off roads.
F2 Significant Tornado	113-157 mph	Considerable damage. Roofs torn off frame houses. Large trees snapped or uprooted. Light-object missiles generated.
F3 Severe Tornado	158-206 mph	Severe damage. Roofs and some walls torn off well constructed homes. Trains overturned. Most trees in forests uprooted. Heavy cars lifted off ground.
F4 Devastating Tornado	207-260 mph	Well-constructed houses leveled. Structures with weak foundations blown off some distance. Cars thrown and large missiles generated.
F5 Incredible Tornado	261-318 mph	Strong frame houses lifted off foundations and disintegrated. Automobile-sized missiles fly through the air in excess of 100 mph. Trees debarked.

*The Fujita scale (F-scale) uses actual damage to determine a tornado's wind speed.

Atlantic Storm Names

<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Arthur	Ana	Alex	Arlene
Bertha	Bill	Bonnie	Bret
Cristobal	Claudette	Colin	Cindy
Dolly	Danny	Danielle	Don
Edouard	Erika	Earl	Emily
Fay	Fred	Fiona	Franklin
Gonzalo	Grace	Gaston	Gert
Hanna	Henri	Hermine	Harvey
Isaias	Ida	Ian	Irma
Josephine	Joaquin	Julia	Jose
Kyle	Kate	Karl	Katia
Laura	Larry	Lisa	Lee
Marco	Mindy	Matthew	Maria
Nana	Nicholas	Nicole	Nate
Omar	Odette	Otto	Ophelia
Paulette	Peter	Paula	Philippe
Rene	Rose	Richard	Rina
Sally	Sam	Shary	Sean
Teddy	Teresa	Tobias	Tammy
Vicky	Victor	Virginie	Vince
Wilfred	Wanda	Walter	Whitney