



#### **PORT LOUIS MARINA**

# HURRICANE PLAN Valid from release in 2025 – to 30<sup>th</sup> November 2025

Camper & Nicholsons Port Louis Marina MB #9012 Kirani James Boulevard St. George's Grenada West Indies

26<sup>th</sup> May 2025

#### **PURPOSE OF THE PLAN**

The purpose of the plan is to provide an organized and effective response to the continuing risk of hurricanes to Port Louis Marina (hereafter "the Marina") facilities and boats docked at the Marina.

See the **Glossary** for terms used in this plan and in hurricane weather forecasts.

The Marina requires that all people (see responsibilities below) on the Marina take early and appropriate action to limit the impact of hurricanes. Such actions may prevent any loss of life or injury and will certainly better protect boats and property. Additionally, when you leave your boat for the season, it must be in a storm prepared condition and under a caretaking service of repute. Please make sure you have read the Marina Rules & Regulations in conjunction with this plan and fully understand them.

# **OBJECTIVES OF THE PLAN**

The objectives of this plan are to:

- Prevent any risk to the lives, health, or safety of all residents, workers, or visitors at the Marina both during and after a hurricane.
- Minimize the risk to the Marina facilities and boats docked at the Marina.

The overriding principle behind these objectives is that *property is replaceable; people are not*. Property can be protected with prudent actions before each hurricane and with adequate insurance. During and after a hurricane, only the minimum number of personnel designated by our Marina Management will be allowed into the Marina and its facilities. Please also note that if a "State of Emergency" is declared, no one may be able to leave their place of hiding or residence; this includes staff and marina guests.

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#### **INSTIGATION OF THE PLAN**

The activities in this plan are keyed to forecasts from various weather services including the National Weather Service and the National Hurricane Centre. The Marina will commence executing its plan for a hurricane when the probability is 50 percent or higher that the center of a named storm or hurricane will pass within 75 miles of Grenada, within 72 hours. It may also instigate the plan earlier or if forecasts warrant it. Information about hurricane probabilities is available at: <a href="https://www.nhc.noaa.gov">www.nhc.noaa.gov</a>

#### **RESPONSIBILITIES**

This applies to all people on the Marina, including but not limited to, boat owners, berth owners, boat charterers, crew, tenants, building occupiers etc. Every effort will be made to distribute this plan to all persons, but it shall be their responsibility to ensure they have the current version of this plan and to distribute it within their own organizations. The Marina will keep a copy of this plan in the Marina Office. An electronic version can be obtained by sending an e-mail request to: reservations@cnportlouismarina.com or by visiting our website.

All persons shall comply with directions from public authorities and Marina staff before, during, and after a hurricane with respect to evacuation, movement within the area and other public safety measures. The Marina reserves the right to exclude from the Marina, after the event, any person or vessel that has not complied with directions from public authorities or Marina staff.

It is also imperative that individuals and businesses prepare their own Hurricane Plan. The Grenada Chamber of Industry and Commerce issues an information document and the 2010 version can be found at **Annex B**.

#### **INTRODUCTION**

#### The Hurricane Threat to Port Louis Marina

The Marina's location in the south-eastern Caribbean has a hurricane risk. Though considered south of the "hurricane belt", the possibility of tropical storms and hurricanes does exist. Storms passing through the area, even a hundred miles away can affect the area with flooding and wind damage.

See **Annex A** for a detailed description of the categories and their effects.

For coastal areas, the effects of hurricanes include high wind, storm surge, waves, and flooding. Wind pressure and buffeting can affect all buildings within the marina and vessels berthed on the pontoons. Wind can also pick up unsecured items and throw them against structures and boats, causing damage.

Hurricane pressure differences between the center and its edges create storm surge flooding by lifting the surface of bodies of water. The intensity of wind, its duration in time, and distance over water which

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it blows (i.e., fetch) determine the size and frequency of waves. Flooding also results from excessive rain. Run-off can also produce mudslides.

In any coastal location, the impact of any of the above is a function of the intensity of the storm, its rate and direction of movement, and its proximity. Tropical cyclones have a counter-clockwise circulation so their direction and speed of travel add velocity to wind to the right, forward quadrant of the storm. Thus, for any location, wind may be greater or lesser depending on the observer's location relative to the hurricane eye.

The official North Atlantic hurricane season runs from 1<sup>st</sup> June to 30<sup>th</sup> November. The US Commerce Department's National Oceanic and Atmospheric Administration (NOAA) share the following:

Beginning with this year's hurricane season outlook May 22, 2025 Forecasters within NOAA's National Weather Service predict above-normal hurricane activity in the Atlantic basin this year.

NOAA forecasters with the <u>Climate Prediction Center</u>, a division of the National Weather Service, predict above-normal hurricane activity in the Atlantic this year. NOAA's outlook for the 2025 Atlantic hurricane season, which goes from June 1 to November 30, predicts a 30% chance of a near-normal season, a 60% chance of an above-normal season, and a 10% chance of a below-normal season.

The agency is forecasting a range of 13 to 19 total named storms (winds of 39 mph or higher). Of those, 6-10 are forecast to become hurricanes (winds of 74 mph or higher), including 3-5 major hurricanes (category 3, 4 or 5; with winds of 111 mph or higher). NOAA has a 70% confidence in these ranges.

"NOAA and the National Weather Service are using the most advanced weather models and cuttingedge hurricane tracking systems to provide Americans with real-time storm forecasts and warnings," said Commerce Secretary Howard Lutnick. "With these models and forecasting tools, we have never been more prepared for hurricane season."

#### **Factors influencing NOAA's predictions**

The season is expected to be above normal – due to a confluence of factors, including continued **ENSO- neutral conditions**, warmer than average ocean temperatures, forecasts for weak wind shear, and the potential for higher activity from the West African Monsoon, a primary starting point for Atlantic hurricanes. All of these elements tend to favor tropical storm formation.

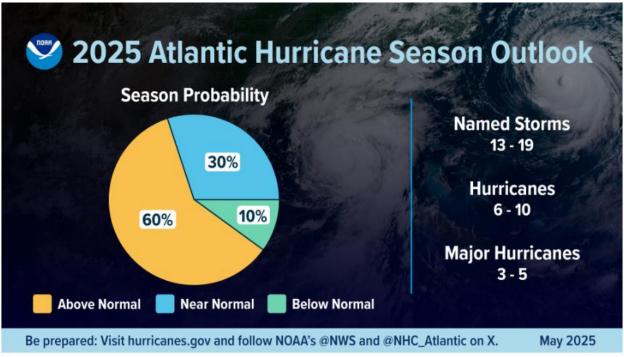
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The high activity era continues in the Atlantic Basin, featuring high-heat content in the ocean and reduced trade winds. The higher-heat content provides more energy to fuel storm development, while weaker winds allow the storms to develop without disruption.

This hurricane season also features the potential for a northward shift of the West African monsoon, producing tropical waves that seed some of the strongest and most long-lived Atlantic storms.

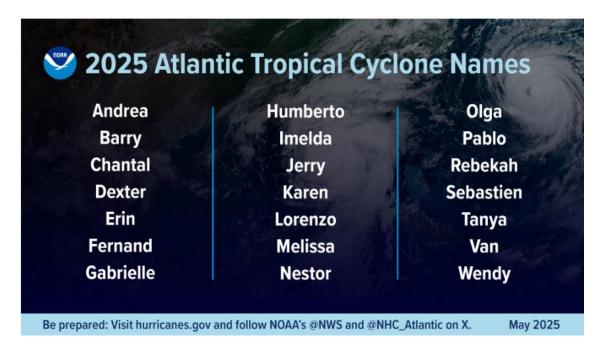


A summary infographic showing hurricane season probability and numbers of named storms predicted, according to NOAA's 2024 Atlantic Hurricane Season Outlook. The official start of the Atlantic hurricane season is June 1 and runs through November 30. (See also news release text for data found within above graphic.) (Image credit: NOAA NWS)





## **2025 NOAA Tropical Cyclone Names:**



The alphabetical list of 2025 Atlantic hurricane names as chosen by the World Meteorological Organization. Find a text version of this list at <a href="https://hurricanes.gov/aboutnames.shtml#atl">hurricanes.gov/aboutnames.shtml#atl</a> (Image credit: NOAA NWS) <a href="https://doi.org/10.1007/journames.shtml#atl">Download Image</a>

#### Port Louis Marina as a "Hurricane Hole"

The Marina sits just across from The Carenage in the St George's harbour. High ground bounds the north, south and east sides. The hill at the Port Louis Development also acts as a buffer. On the west side is the entrance to the harbour facing the Caribbean Sea. Due to its convenient location and local knowledge of it being a "hurricane hole" there is a high probability that vessels will relocate to the Lagoon during the threat of tropical weather. Having additional boats anchored in the area will have an effect on the Marina as it prepares for a weather event. The Marina staff will endeavor to inform all owners via VHF, email or in person of the threat of tropical weather. Our Berthing Masters will visit each vessel very early on and verbally advise the vessel owners to prepare and co-ordinate with relevant concierge services. There can be no guarantee that a perceived "Hurricane Hole" will be as protected as hoped.





#### CAMPER & NICHOLSONS PORT LOUIS MARINA, HURRICANE MANAGEMENT TEAM

The management team consists of the following personnel:

Zara Tremlett General Manager
Lisa Scipio-Green Office & HR Manager
Francis Ashton Maintenance Supervisor
Gina Hector Accountant Supervisor
Joel R. Grey Senior Berthing Master
Ted Toussaint Security Supervisor

The hurricane management team will take all available steps to achieve the objectives of this plan. Actions & Preparations in the event of a Hurricane are detailed at **Annex C**.

The hurricane management team will also comply with direction from public authorities. Thus, the hurricane management team may not be immediately available just before, during or after a hurricane. In the case of the management team being absent from the marina, the security of property, i.e., the Marina, facilities and boats rests with preparations taken before a hurricane.

When the hurricane management team is present at the Marina during or immediately after a hurricane, they will control who is present at the Marina. Persons wishing to be on the Marina during and immediately after a hurricane must get verbal permission from a member of the hurricane management team. It is believed such control is in the best interests of all persons. A muster point will be made apparent at that time.

Camper & Nicholsons Grenada Services Ltd assumes <u>NO</u> responsibility to prepare boats and tenant buildings for a hurricane. This is the sole responsibility of owners, occupiers etc who MUST make these preparations personally or arrange to have the work done for them. It is also the responsibility of these persons to ensure they hold the appropriate insurance for these types of event. <u>The owner MUST ensure</u> that the vessel insurance covers 3<sup>rd</sup> party liability, salvage and wreck removal costs, as well as cover to remain in Grenada during the hurricane season and cover for named storms or hurricanes.

Boats MUST be secured with sufficient numbers of dock lines of adequate strength and length to remain secure for all conditions of flooding up to six feet above mean low water. Dock lines shall include appropriate chafing and shock-absorbing gear as required. As per the authority granted by the Marina Rules & Regulations, the Marina management hereby instructs all vessels of length 20.0 metres, or greater, to leave the Marina in the event of a hurricane being forecast. Furthermore, the Marina management and staff reserve the right to enforce mandatory vessel evacuation, irrespective of size, if deemed necessary for safety reasons.

All guests that may normally be living on their yachts in the marina, are requested to seek shelter ashore until the hurricane has passed through. After any storm please be aware a state of emergency may well be in effect so you must remain inside, at your location; this is, among other reasons, to prevent injury due to downed cables and debris, as well as looting risks. This order will come from NADMA and the Government of Grenada.

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**ANNEX A** 

#### The Saffir-Simpson Hurricane Scale

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf in the landfall region. Note that all winds are using the U.S. 1-minute average.

#### **Category One Hurricane**

Winds 74-95 mph (64-82 kt or 119-153 km/hr). **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. Irene of 1999, **Katrina of 2005**, and several others were Category One hurricanes at landfall in South Florida.

## **Category Two Hurricane**

Winds 96-110 mph (83-95 kt or 154-177 km/hr). 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. Frances of 2004 was a Category Two when it hit just north of Palm Beach County, along with at least 10 other hurricanes which have struck South Florida since 1894.

## **Category Three Hurricane**

Winds 111-129 mph (96-112 kt or 178-208 km/hr). **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. Unnamed hurricanes of 1909, 1910, 1929, 1933, 1945, and 1949 were all Category 3 storms when they struck South Florida, as were King of 1950, Betsy of 1965, **Jeanne of 2004**, and **Irma of 2017**.

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## **Category Four Hurricane**

Winds 130-156 mph (113-136 kt or 209-251 km/hr). 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. The 1888, 1900, 1919, 1926 Great Miami, 1928 Lake Okeechobee/Palm Beach, 1947, Donna of 1960 made landfall in South Florida as Category Four hurricanes.

## **Category Five Hurricane**

Winds 157 mph or higher (137 kt or higher or 252 km/hr 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 Keys Hurricane of 1935 and Andrew of 1992 made landfall in South Florida as Category Five hurricanes.

**ANNEX B** 

## **HURRICANE PREPAREDNESS**

Most of the predicted activity is likely to occur during the peak months (August-October) of the hurricane season.

By the Start of Hurricane Season you MUST:

> Have a family Disaster Plan

"Preventing the loss of life and minimizing the damage to property from hurricanes are responsibilities that are shared by all." One of the ways you can prepare for and mitigate against disaster is by planning with your family. How many of us have family disaster plan? Your family Disaster plan must be based on your vulnerability to the Hurricane Hazards. You must keep a written plan and share your plan with other friends or family.

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### **FAMILY DISASTER PLAN**

- Discuss the type of hazards that could affect your family. Know your home's vulnerability to storm surge, flooding and wind.
- ➤ Locate a safe room or the safest areas in your home for each hurricane hazard. In certain circumstances the safest areas may not be your home but within your community.
- Determine escape routes from your home and places to meet.
- ➤ Have an out-of-community person as a contact, so all your family members have a single point of contact.
- Make a plan now for what to do with your <u>pets</u> if you need to evacuate. Remember pets are not allowed in shelters
- Post emergency telephone numbers by your phones and make sure your children know how and when to call these numbers.
- Check your insurance coverage
- > Stock non-perishable emergency supplies and a **Disaster Supply Kit**.
- > Use a <u>battery operated radio</u>. Remember to replace its battery every 6 months.
- Take First Aid, CPR and disaster preparedness classes.
- Plan for evacuation

Remember Disaster prevention includes both being prepared as well as reducing damage (mitigation)

## > Have a place to go

One of the most important decisions you will have to make is "Should I Evacuate?"

When you are asked to evacuate, you MUST do so without delay. That means that you should identify a place to go.

The Marina team will provide details of local hurricane shelters and hotel lists. PLEASE BOOK EARLY as rooms fill up fast and the likelihood of a curfew will mean no transport services. Please book at least 72 hours prior to the expected arrival of the storm, including your transport. Be at your destination at least 48 hours before the anticipated impact.

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Please note, pets cannot go to shelters. Pet friendly accommodation options will be shared as possible.

If your family hurricane preparedness plan includes evacuation to a safer place then it is important to consider the following points:

- ♣ If ordered to evacuate, do not wait or delay your departure.
- Select an evacuation destination that is nearest to the Marina, or at least minimize the distance over which you must travel in order to reach your intended shelter location.
- If possible, make arrangements to stay with the friend or relative who resides closest to the Marina and who will not have to evacuate. Discuss with your intended host the details of your family evacuation plan well before the beginning of the hurricane season.
- If you are unable to stay with friends or family, then as a last resort go to a shelter.

  Remember, shelters are not designed for comfort. Bring your <u>disaster supply kit</u> and food and water supplies with you to the shelter.
- ♣ Make sure that you fill up your car with gas, before you leave.
- **♣** Ensure your cell phone/phones are fully charge and carry them with you.

## > Assemble your Disaster Supply Kit

There are certain items you need to have regardless of where you ride out a hurricane. The disaster supply kit is a useful tool when you evacuate as well as making you as safe as possible in your home. These items are often scattered around your home and simply need to be brought together into one location. In certain circumstances you may need to go to a store to purchase an item to supplement your kit.

#### **DISASTER SUPPLY KIT**

- **Water** at least 1 gallon daily per person for 3 to 7 days
- **Food** at least enough for 3 to 7 days non-perishable packaged or canned food / beverages
  - foods for infants or the elderly
  - o non-electric can opener
  - matches
  - Disposable Eating Utensils
- Blankets / Sleeping Bags / Pillows
- ✓ Clothing at least one complete change of clothing and foot wear per person
  - rain gear/ sturdy shoes or work boots/gloves
- ✓ First Aid Kit / Medicines / Prescription Drugs
- Special Items for babies and the elderly
- Toiletries (Toilet Paper, soap, disinfectant, sanitary napkins etc.)
- **✓** Household chlorine bleach
- ✓ Flashlight / Extra Batteries

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- Radio Battery operated
- **Mobile Phones** Fully charged cell phone with extra battery
- Cash (with some small bills) and Credit Cards Banks and ATMs may not be available for extended periods
- **√** Keys
- ✓ Toys, Books and Games
- ✓ Vehicle fuel tanks filled
- ✓ Pet care items
  - o Proper identification/immunization records/medications
  - Ample supply of food and water
  - A carrier or cage
  - o Muzzle and leash
- Important documents in a waterproof container or watertight re-sealable plastic bag
  - identification cards
  - passport
  - o insurance
  - medical records
  - o bank account numbers
  - o Birth, marriage and death certificates etc.

https://www.noaa.gov/hurricane-prep

#### **Hurricane Warning System**

**Advisory:** Issued at regular intervals when a tropical storm or hurricane is first detected in the area. **Hurricane Watch:** Issued within **36 hours** when the hurricane poses a threat but actual strike is not certain. **Hurricane Warning:** Issued when the country can be affected by hurricane conditions within **24 hours**.

#### Know What to Do When a Hurricane WATCH Is Issued

- Listen to the radio or TV stations for updates.
- Prepare to bring inside any lawn furniture, outdoor decorations or ornaments, trash cans, hanging plants, and anything else that can be picked up by the wind.
- Prepare to cover all windows of your home. If shutters have not been installed, use plywood. *Note:* Tape does not prevent windows from breaking.
- Fill your car's gas tank.
- Check on emergency supplies (food, water, first aid kit, batteries, flashlights etc.)
- Fill containers with water

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#### Know What to Do When a Hurricane WARNING Is Issued

- Listen to the radio for hurricane updates
- Complete preparation activities
- Evacuate immediately if told to do so
- If you are not advised to evacuate, stay indoors, away from windows.
- Batten down windows and glass doors
- Pack all valuable documents in plastic and store in a safe place
- Switch off main electrical switch and gas cylinder.

## **During the Hurricane**

- Stay calm and provide assurance to the young and the elderly
- Do not go outside during the passage of the hurricane eye. Be aware that the calm "eye" is deceptive; the storm is not over. The worst part of the storm will happen once the eye passes over and the winds blow from the opposite direction. Trees, shrubs, buildings, and other objects damaged by the first winds can be broken or destroyed by the second winds.
- If you are away from home in stay in a safe location and remain there until the hurricane is over

#### Know What to Do After a Hurricane Is Over

- Keep listening to the radio or TV stations for instructions.
- If you evacuated, return home when local officials tell you it is safe to do so.
- Inspect your home for damage.
- Use flashlights in the dark; do not use candles.
- Seek medical assistance for injured persons; report missing persons
- Do not touch loose or dangling wire; report these to the nearest utility office
- Do not attempt to cross flooded areas
- Do not go sightseeing in affected areas
- Purify water before usage





ANNEX C

## Port Louis Marina - Actions in the Event of a Hurricane

NB - All check list are suggestions and should not be viewed as a full definitive list

## Stage 1 – General Preparations

## Weather Monitoring

The weather is monitored everyday by the Marina office via NOAA and other websites so they are generally aware of tropical systems many days prior to them approaching the Caribbean. This enables the team to forewarn appropriate persons and take appropriate action themselves.

#### **Port Louis Marina Staff Preparations**

The Marina team will attempt to ensure all boat owners, crew, building tenants etc are given as much notice as possible of an approaching tropical system. They will ensure that the Marina is checked for loose materials, etc and secure as much marina equipment as possible. Where possible they will assist with the preparations of other persons but this cannot be guaranteed and should not be assumed. *Each person is to take responsibility for preparation of their boat, building etc* 

#### **Boat Owner Preparations**

It is the responsibility of the boat owners/Captain/charterer/management company etc to ensure the boat is prepared. The Marina accepts no liability. If the boat is to be left unattended, we insist that the boat is put under a Guardianage contract to ensure that checks, preparations etc are carried out in good time. Such checks/preparations should include but are not limited to:

- Remove all sails.
- Remove all canvas, for example covers, dodgers, sail covers etc.
- Remove as many deck items as possible.
- Lower and/or secure boom protect against damage to deck.
- Ensure suitable numbers and types of lines, fenders etc are in use. Where possible ensure spares are available, including the anchor.
- Anti-chaffing system on lines.
- Shock Absorbing system on lines.
- Use individual lines to double up.
- Additional 2 x lines left on board and easily accessible in the event of chafing/wear or breakage
- Boat MUST be able to move under its' own propulsion. The Marina cannot guarantee that it will be able to move vessels.

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- Vessels that are to be left unattended MUST ensure the Guardianage company are aware of all preparations completed and any others that should be carried out prior to a storm.
- General good condition of the vessel engine etc serviced, firefighting and lifesaving equipment in working order and accessible, cockpit drains clear.
- Vessels must be left in a condition that they can be moved. The Marina accepts no liability for damage to a boat if circumstances dictate it needs to be moved.
- The owner is to ensure that the vessel insurance covers 3<sup>rd</sup> party liability, salvage and wreck removal costs, as well as cover to remain in Grenada during the hurricane season and cover for named storms or hurricanes.

#### **Tenant Preparations**

It is the responsibility of tenants/building occupiers to ensure their building is prepared. The Marina accepts no liability for any loss or damage however caused.

- Ensure all loose items can be secured or if not, remove from site to a secure area.
- Ensure equipment available to fully secure building.
- Ensure Marina staff have contact numbers.

## Stage 2 - Preparations in the event of Named Storm/Hurricane Warning being Issued

Port Louis Marina Staff Preparations (a more detailed plan is shared internally)

If a State of Emergency is announced by the Government of Grenada, a **mandatory evacuation of all guests from their boats** will be called by Marina management. Please do not leave your exit to the last minute due to curfews, lack of transport and no more availability of landside accommodation.

Marina Management may also call for evacuation prior to official Government announcement; ignore these instructions at your own risk.

Buildings – The Marina team will carry out the following actions in the buildings they occupy:

- Secure All Shutters.
- Back-up server data.
- Bag all PCs etc and move to solid building.
- Bag as much archive data as possible and move to solid building.
- On departing, ensure buildings are locked.

## **Pontoons**

- The pontoons will be checked and all loose items such as bins, removed.
- While walking the docks any persons seen will be reminded of impending storm etc.
- Where possible boats will be advised to berth on the East side of the Marina.
- Where possible boats will be berthed as far apart as is possible and if space allows, one boat between finger berths.
- Pontoon bridges will be removed on S Docks

#### Utilities

- All water and electricity supplies will, as far as possible, be isolated.

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# **Boat Owner Preparations**

- Ensure additional lines are in place, including at least 2 spare lines with easy access.
- Secure lines to the strongest part of the boat, double up as possible but with single lines.
- Use all available mooring cleats on pontoons.
- Where available, use additional lines to secure to the moorings between berths.
- Remove and secure all shore connection such as power and water.
- Check batteries, bilge pumps and onboard safety systems are in good order.
- Ensure ALL loose items are removed and stored below including running rigging where possible. If not, this should be well lashed.
- All hatches, ports etc are closed and locked.
- Where possible block off all vents.
- Dinghies to be deflated and where possible, stored below or lashed inverted to the deck.
- Photograph vessel after preparations are complete this creates useful record following a hurricane.
- NO-ONE is to remain on board the vessel during a Storm or Hurricane. The Marina can provide details of local shelters.
- Leave a spare set of keys with the Marina office

## **Tenant Preparations**

- Ensure all utilities are switched off.
- Ensure all doors & windows are secured.
- Photograph the building to provide evidence to the insurance company if required.

## **General**

The local authorities are likely to insist that the Marina be evacuated. All persons MUST comply with instructions given by local authorities and Port Louis Marina Staff communicating these instructions, this includes when it is safe to return.

After the event, the Marina staff will where possible inform persons when it has been advised that it is safe to return and provide assistance in clearing up.

The Marina staff will as soon as it is possible and safe to do so, re-open the Marina office to provide a central point of communication.

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## **Glossary**

**Advisory** Official information issued by tropical cyclone warning centres describing all tropical cyclone watches and warnings in effect along with details concerning tropical cyclone locations, intensity and movement and precautions that should be taken. Advisories are also issued to describe: tropical cyclones before issuance of watches and warnings and subtropical cyclones.

**Best Track** A subjectively smoothed path, versus a precise and very erratic fix-to-fix path, used to represent tropical cyclone movement. It is based on an assessment of all available data.

**Centre** The vertical axis or core of a tropical cyclone. It is usually determined by cloud vorticity patterns, wind, and/or pressure distributions.

**Centre/Vortex Fix** The location of the centre of a tropical or subtropical cyclone obtained by reconnaissance aircraft penetration, satellite, radar, or synoptic data.

**Central North Pacific Basin** The region north of the Equator between 140W and the International Dateline. The Central Pacific Hurricane Centre (CPHC) in Honolulu, HI is responsible for tracking tropical cyclones in this region.

**Cyclone** An atmospheric closed circulation rotating counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere

**Eastern North Pacific Basin** The region north of the Equator east of 140W. The National Hurricane Centre in Miami, FL is responsible for tracking tropical cyclones in this region.

**Eye** The relatively calm centre of the tropical cyclone that is more than one half surrounded by wall cloud.

**Eye Wall/Wall Cloud** An organized band of cumuliform clouds immediately surrounding the centre of a tropical cyclone. Eye wall and wall cloud are used synonymously.

**Explosive Deepening** A decrease in the minimum sea-level pressure of a tropical cyclone of 2.5 mb/hr for at least 12 hours or 5 mb/hr for at least six hours.

**Extratropical** A term used in advisories and tropical summaries to indicate that a cyclone has lost its "tropical" characteristics. The term implies both poleward displacement of the cyclone and the conversion of the cyclone's primary energy source from the release of latent heat of condensation to baroclinic (the temperature contrast between warm and cold air masses) processes. It is important to note that cyclones

can become extratropical and still retain winds of hurricane or tropical storm force.

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**Fujiwhara Effect** A binary interaction where tropical cyclones within a certain distance (300-750 nm depending on the sizes of the cyclones) of each other begin to rotate about a common midpoint.

**Gale Warning** A warning of 1-minute sustained surface winds in the range 34 kt (39 mph or 63 km/hr) to 47 kt (54 mph or 87 km/hr) inclusive, either predicted or occurring not directly associated with tropical cyclones.

**High Wind Warning** A high wind warning is defined as 1-minute average surface winds of 35 kt (40 mph or 64 km/hr) or greater lasting for 1 hour or longer, or winds gusting to 50 kt (58 mph or 93 km/hr) or greater regardless of duration that are either expected or observed over land.

**Hurricane/Typhoon** A warm-core tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 64 kt (74 mph or 119 km/hr) or more. The term hurricane is used for Northern Hemisphere cyclones east of the International Dateline to the Greenwich Meridian. The term typhoon is used for Pacific cyclones north of the Equator west of the International Dateline.

**Hurricane Local Statement** A public release prepared by local National Weather Service offices in or near a threatened area giving specific details for its county/parish warning area on (1) weather conditions, (2) evacuation decisions made by local officials, and (3) other precautions necessary to protect life and property.

**Hurricane Season** The portion of the year having a relatively high incidence of hurricanes. The hurricane season in the Atlantic, Caribbean, and Gulf of Mexico runs from June 1 to November 30. The hurricane season in the Eastern Pacific basin runs from May 15 to November 30. The hurricane season in the Central Pacific basin runs from June 1 to November 30.

**Hurricane Warning** A warning that sustained winds 64 kt (74 mph or 119 km/hr) or higher associated with a hurricane are expected in a specified coastal area in 24 hours or less. A hurricane warning can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continue, even though winds may be less than hurricane force.

**Hurricane Watch** An announcement of specific coastal areas that a hurricane or an incipient hurricane condition poses a possible threat, generally within 36 hours.

**Post-storm Report** A report issued by a local National Weather Service office summarizing the impact of a tropical cyclone on its forecast area. These reports include information on observed winds, pressures,

storm surges, rainfall, tornadoes, damage, and casualties.

**Preliminary Report** A report summarizing the life history and effects of an Atlantic or eastern Pacific tropical cyclone. It contains a summary of the cyclone life cycle and pertinent meteorological data, including the post-analysis best track (six-hourly positions and intensities) and other meteorological statistics. It also contains a description of damage and casualties the system produced, as well as information on forecasts and warnings associated with the cyclone. NHC writes a preliminary report on every tropical cyclone in its area of responsibility.

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**Present Movement** The best estimate of the movement of the centre of a tropical cyclone at a given time and given position. This estimate does not reflect the short-period, small-scale oscillations of the cyclone centre.

**Probability of Tropical Cyclone Conditions** The probability, in percent, that the cyclone centre will pass within 50 miles to the right or 75 miles to the left of the listed location within the indicated time period when looking at the coast in the direction of the cyclone's movement.

**Rapid Deepening** A decrease in the minimum sea-level pressure of a tropical cyclone of 1.75 mb/hr or 42 mb for 24 hours.

**Relocated** A term used in an advisory to indicate that a vector drawn from the preceding advisory position to the latest know position is not necessarily a reasonable representation of the cyclone's movement.

**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 or astronomic high tide from the observed storm tide.

**Storm Tide** The actual level of seawater resulting from the astronomic tide combined with the storm surge.

**Storm Warning** A warning of 1-minute sustained surface winds of 48 kt (55 mph or 88 km/hr) or greater, either predicted or occurring, not directly associated with tropical cyclones.

**Subtropical Cyclone** A low pressure system that develops over subtropical waters that initially has a non-tropical circulation but in which some elements of tropical cyclone cloud structure are present. Subtropical cyclones can evolve into tropical cyclones. Subtropical cyclones are generally of two types:

An upper level cold low with circulation extending to the surface and maximum sustained winds generally occurring at a radius of about 100 miles or more from the pressure centre.

A mesoscale cyclone originating in or near a frontolyzing zone of horizontal wind shear, with radius of maximum sustained winds generally less than 30 miles. The entire circulation sometimes encompasses an area initially no more than 100 miles in diameter

These generally short-lived, marine cyclones may vary in structure from cold to warm core.

**Subtropical Depression** A subtropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 33 kt (38 mph or 62 km/hr) or less.

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**Subtropical Storm** A subtropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 34 kt (39 mph or 63 km/hr) or more.

**Synoptic Track** Weather reconnaissance mission flown to provide vital meteorological information in data sparse ocean areas as a supplement to existing surface, radar, and satellite data. Synoptic flights better define the upper and aid in the prediction of tropical cyclone development and movement.

**Tropical Cyclone** A warm-core, non-frontal low-pressure system of synoptic scale that develops over tropical or subtropical waters and has a definite organized surface circulation.

**Tropical Cyclone Plan of the Day** A coordinated mission plan that tasks operational weather reconnaissance requirements during the next 1100 to 1100 UTC day or as required, describes reconnaissance flights committed to satisfy both operational and research requirements, and identifies possible reconnaissance requirements for the succeeding 24-hour period.

**Tropical Depression** A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 33 kt (38 mph or 62 km/hr) or less.

**Tropical Disturbance** A discrete tropical weather system of apparently organized convection—generally 100 to 300 nmi in diameter---originating in the tropics or subtropics, having a non-frontal migratory character, and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field.

**Tropical Storm** A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph or 118 km/hr).

**Tropical Storm Warning** A warning for tropical storm conditions including sustained winds within the range of 34 to 63 kt (39 to 73 mph or 63 to 118 km/hr) that are expected in a specified coastal area within 24 hours or less.

**Tropical Storm Watch** An announcement that a tropical storm poses, or tropical storm conditions poses a threat to coastal areas generally within 36 hours. A tropical storm watch should normally not be issued if the system is forecast to attain hurricane strength.

**Tropical Wave** A trough or cyclonic curvature maximum in the trade-wind easterlies. The wave may reach maximum amplitude in the lower middle troposphere.

Please note this plan may be updated and will be shared accordingly. Updated 23.05.2025

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