



**DEPARTMENT OF LAND AND
NATURAL RESOURCES (DLNR)**

**DIVISION OF BOATING AND
OCEAN RECREATION (DOBOR)**

**HURRICANE EMERGENCY PLAN
(Updated 04/28/11)**



I. Purpose

The following is intended to inform affected parties of the policies and procedures which will be observed should a hurricane threaten the Division of Boating and Ocean Recreation's harbors and facilities. It is essential for each boater to devise their own emergency plan tailored to fit their unique situation in the event of a hurricane. It is also essential for boaters to act independently to safeguard their vessel(s) and property, or designate agents to act on their behalf, in concert with DOBOR procedures for closing and securing harbor facilities.

II. Background

- A. A hurricane is one of the most destructive and widespread natural forces that may pose a threat to the entire State. A hurricane, unlike an earthquake or a tsunami, gives sufficient warning to allow for protection of people and property.
- B. A hurricane system varies in size from 100 to 400 miles in diameter and can move across the ocean at speeds that typically range from 10 to 20 miles per hour. Due to the counter clockwise circulation of the winds around the center of the storm and the systems forward motion, the most devastating force is associated with the right side of the storm in the direction of the storm's movement.
- C. In the Hawaiian area, planning is based on hurricane force sustained winds of 115 miles per hour with gusts up to 150 miles per hour extending outward from the wall clouds to a radius of approximately 30 miles and sustained winds of 40 miles per hour with gusts of 60 miles per hour extending as far as 150 miles from the wall clouds. In addition, a hurricane may generate waterspouts and tornadoes.
- D. The three major hazards generated by hurricanes and tropical storms are as follows:
 - 1. Wind damage.
 - 2. Storm surge.
 - 3. Heavy rainfall flooding.

III. Procedures.

Actions outlined below provide for a graduated increase in readiness based on Hurricane Watch and Warning advisories issued by the National Weather Service over local radio/tv networks. The advisories are issued to alert the public to the potential threat.

A. **HURRICANE WATCH:** Is issued when there is a threat of hurricane conditions within 36 hours to the nearest landfall in the State. Small boat harbors' preparations are as follows:

1. District Manager will be contacted by State or County Civil Defense as appropriate, and provided necessary information regarding storm position, intensity and projected direction of movement.
2. District Manager will review all applicable disaster plans and checklists regarding the preparation of personnel, facilities and equipment (see Annex A).
3. District Manager will plot and log the position of the hurricane as information becomes available.
4. Should a Hurricane Watch be issued after normal work hours or during holidays, the District Manager will assure that all Harbor Agents and Supervisors are alerted to the potential emergency and advised to test their telephone recall procedures so as to assure their employees are made aware of the situation and the required response actions.

B. **HURRICANE WARNING:** Is issued when sustained winds of 74 miles (64 knots) per hour or more are expected in a specified area in 24 hours or less. A hurricane warning can remain in effect when a combination of dangerously high water or high waves continue, even though winds may be less than 74 miles (64 knots) per hour. Actions to protect life and property should begin immediately in the harbors for which the warning is issued.

1. The District Office will assure actions required for a Hurricane Watch are completed or in progress, and the below actions are implemented.
2. The District Manager will initiate actions on appropriate checklist (see Annex A).
3. The District Manager will establish a control center for operations at the District Office.
 - a. Operations Control Procedures:
 - 1) Maintain a written log of actions taken.
 - 2) Review current harbor operations.
 - (a) Vessels present in harbor.
 - (b) Tenant activity within the harbor.
 - 3) **ALERTING AFFECTED PARTIES:**

This will entail a review of those parties currently utilizing harbor facilities and ensuring that they are aware of the current situation and obtaining an estimate of the time needed for the vessels to get underway. These parties will include:

- (a) All vessels in this harbor.
- (b) Boating Division tenants, including harbor leasees.

4) **INSTITUTE PROTECTIVE ACTIONS:**

- (a) Harbor Agent will survey harbor property for hazards, loose gear and any other potential dangerous conditions and alert tenants.
- (b) Have maintenance personnel secure loose gear and remove hazards.
- (c) At least 12 hours prior to expected arrival of hurricane force winds, tape or board windows and secure loose objects, and protect vital records and equipment including reproduction and office machines.
- (d) Be prepared to suspend all out-of-doors operations when sustained wind speeds reach 40 miles (35 knots) per hour.
- (e) Assign personnel to top off all vehicles and emergency generators with fuel.

C. **PROCEDURES FOR CLOSING HARBOR:**

1. Harbor tenants will be expected to have their facilities secured and personnel vacated FORTY-FIVE MINUTES prior to the expected arrival of the hurricane.
2. Enforcement and/or harbor personnel will direct traffic within the harbor to expedite evacuation. No unnecessary vehicles will be allowed on the harbor's property.
3. In the interest of safety, and for the protection of State property, the maintenance crew may assist harbor tenants and users in their emergency preparations at the discretion of the Harbor Agent.
4. Thirty (30) minutes prior to anticipated arrival of hurricane, the Harbor will be secured.
 - a. All harbor personnel will be released to go home or to a designated shelter.

- b. Employees should monitor radio broadcasts and return to work when the “All Clear” is sounded and/or upon contact by their Supervisor.

D. **RECOVERY:** It is essential that recovery operations not be initiated too soon. It must be established that the worst of the storm has passed. This occurs when it is safe to exit buildings and travel on public roads.

1. The District Manager will assign individuals specific areas to survey and report damages. Assistance will be rendered to injured persons.
2. Harbor Agents will survey their areas and report damages and any injuries noted.
3. When it is safe, tenants will be granted access to assess damage and institute clean-up/repair action.
4. Accomplish casualty reporting to the Division Office and carry out other recovery operations.
5. Absolute security must be maintained to prevent unauthorized access or looting to the Division's property.
6. Maintain an accountability of all funds and resources expended.

- Annex A. Emergency Checklist**
Annex B. List of Disaster Response Workers (not included in this document)
Annex C. Telephone Emergency Recall System (not included in this document)

ANNEX A Emergency Checklist

The attached Hurricane Checklists allow for time phased protective actions in response to a National Weather Service Hurricane Watch or Warning.

The Emergency Action items listed on each of the five (5) Hurricane Checklists are sequenced for an orderly response. Due to the unpredictable nature of hurricanes, actions should be completed as the situation dictates. Always follow-up on the status of incomplete action items.

The District Offices are to supplement the Hurricane Checklists according to their operational areas of concern. Guidelines established in the Department of Land and Natural Resources' Disaster Response and Assistance Plan apply.

Attachments:

Hurricane Checklist #1: Hurricane Watch Response Instructions. Hurricane conditions pose a threat to Hawaii within 36 hours. Analysis of the situation and review of emergency actions are required.

Hurricane Checklist #2: Hurricane Warning Response instructions. Hurricane force winds. Heavy rains and high surf conditions are expected to affect a specified area within 24 hours. Start protective actions.

Hurricane Checklist #3: Hurricane Warning Response Instructions. Winds of 40 miles per hour (35 knots) or more are expected to strike a specified area within 12 hours. Heavy rains, flooding and dangerous surf conditions may already be occurring in many areas. Accelerate protective actions.

Hurricane Checklist #4: Hurricane Warning Response Instructions. Winds of 40 miles per hour (35 knots) or more are striking specified areas. Take cover in the affected areas. All other areas continue with emergency preparations.

Hurricane Checklist #5: Hurricane "All Clear." Hurricane conditions are no longer a threat to the general public. Post disaster hazards may exist. Precautionary measures are in order. This checklist includes actions needed to initiate post disaster recovery.

HURRICANE CHECKLIST #1
HURRICANE WATCH RESPONSE INSTRUCTIONS

Situation: The National Weather Service (NWS) will issue a Hurricane Watch for the State of Hawaii when hurricane conditions pose a possible threat to coastal and inland areas within 36 hours. Preliminary cautions are required.

EMERGENCY ACTIONS

1. ____ Review and analyze National Weather Service advisories as received.
2. ____ Start log of emergency actions.
3. ____ Plot hurricane position on Hurricane Tracking Map.
4. ____ Advise Departmental CD Coordinator(s) of hurricane status.
5. ____ Check adequacy of emergency communications and equipment.
6. ____ Establish communications with Civil Defense.
7. ____ Review employee work schedule and recall procedures
8. ____ Test departmental emergency communications system.
9. ____ Review procedures to protect vital records, equipment and supplies.
10. ____ Ensure employees are aware of hurricane hazards and instructed on protection actions.
11. ____ Inventory stocks of duck tape, lumber, nails, sand bags, rope, cable wire, etc. as required to minimize damage to structures and facilities.
12. ____ Inventory stocks of flashlights, batteries and candles as required for periods of power outages and field work.
13. ____ Inventory contents of first aid kits and replenish shortage items as required.
14. ____ Ensure designated staging areas are cleared of debris and ready for parking of vehicles/equipment.
15. ____ Instruct vehicle and equipment operators to keep fuel tanks full.
16. ____ Monitor radiotv for hurricane update and instructions.
17. ____ Monitor and plot storm progress.
18. ____ Review Hurricane Checklist numbers 2, 3, 4 and 5.

HURRICANE CHECKLIST #2
HURRICANE WARNING RESPONSE INSTRUCTIONS

Situation: The National Weather Service (NWS) has indicated that hurricane conditions are projected to affect the State of Hawaii. Sustained winds of 74 miles per hour (64 knots) or more are **expected** to threaten a specified area within 24 hours. Expect coastal areas as far as 400 miles from the storm center to be affected by severe surf conditions, damaging waves and high water levels.

EMERGENCY ACTIONS

1. ____ Review and analyze NWS Hurricane Warning advisory as received.
2. ____ Determine the immediate areas for concern.
3. ____ Complete actions listed on Hurricane Watch Checklist.
4. ____ Keep CD Coordinators and facility managers updated on NWS hurricane advisories and emergency instructions.
5. ____ Establish radio/telephone communications with Civil Defense and DOBOR facilities, as available.
6. ____ Ensure hurricane-plotting data includes storm location, wind intensity, storm travel speed, radius of gale force winds and projected direction of movement.
7. ____ Ensure materials and equipment are readied for flood damage control and recovery operations.
8. ____ Ensure that employees who must be on duty throughout the hurricane are given time to arrange for protection of family and their property.
9. ____ Ensure sufficient lead-time (at least 12 hours in advance of expected 30 mile (26 knots) per hour winds) to allow for facility protection actions:
 - a. ____ Prepare exposed radio antennas for high winds. Check tie down cables for defects and repair, as required.
 - b. ____ Tape or board up windows.
 - c. ____ Use sandbags to secure large doors and minimize water damage to structures.
 - d. ____ Use garbage bags or plastic material to cover vital records, file cabinets and electronic equipment.

- e. ____ Secure loose out-of-doors objects by tying them down or placing them inside a permanent structure.
 - f. ____ Place waste oil drums inside a permanent structure or fill drums with water, secure with cover and tie down straps.
10. ____ Monitor radio/tv for Civil Defense instructions and hurricane updates.
 11. ____ Initiate action to account for overtime meals, materials, supplies, fuel, equipment and funds expended for emergency operations.
 12. ____ Ensure that storm condition effects and risk factors are transmitted to tenants as required.
 13. ____ Monitor tenant protective actions, assist as necessary.
 14. ____ Ensure that damage survey, repair and recovery teams are designated and are available for emergency response operations.
 15. ____ Review procedures to turn off unnecessary electrical equipment prior to closing down operations or evacuating the facility for the duration of the storm.
 16. ____ Review Hurricane Checklist numbers 3, 4 and 5, as required.
 17. ____ Ensure vehicle, construction equipment, portable generator and radio communications equipment listings are current.

HURRICANE CHECKLIST #3
HURRICANE WARNING RESPONSE INSTRUCTIONS

Situation: The National Weather, Service or Civil Defense advises that winds of 40 miles per hour (35 knots) or more are expected to strike a specified area in the State of Hawaii within 12 hours.

EMERGENCY ACTIONS

1. ____ Log all activities and emergency response actions.
2. ____ Confirm NWS advisory with Civil Defense Emergency Operating Center (EOC), as requested.
3. ____ Monitor radio/tv network and departmental communication for problem areas.
4. ____ Locate and plot problem areas on map.
5. ____ Continue to monitor reports from emergency crews, Civil Defense and the NWS regarding levels of rainfall, potential for or occurrence of flash floods and flooding of inland areas.
6. ____ Continue upgrading facility protection standards, taping windows, sandbagging, etc.
7. ____ Continue actions to protect vital records, equipment and supplies from water damage.
8. ____ Establish measures to upgrade security to minimize theft and property damage.
9. ____ Continue with clean-up of general outside areas.
10. ____ Confirm identification of operations and maintenance personnel required for trans and post disaster response operations.
11. ____ Provide standby personnel with report-for-duty instructions.
12. ____ Remind all essential employees that they are on call after “All-Clear” is given.
13. ____ Upon release, assigned personnel will take home a State vehicle and a portable radio with an extra, fully-charged battery.
14. ____ When “All-Clear” is given, assigned personnel, after being contracted by Supervisor will pick up another pre-arranged designated employee.

GENERATORS

- a. ____ Maintain, refuel and service generators.

- b. ____ Ensure that each generator fuel tank is full at all times.
 - c. ____ Store one 55-gallon drum of spare fuel.
 - d. ____ Verify that emergency generators are available for fueling operation if power outage occurs.
15. ____ Ensure emergency actions listed on Hurricane Checklist #1 are closed out.
16. ____ Ensure all non-essential employees have been released from work.
17. ____ Close down and secure non-permanent (buildings constructed of wood frame and siding, corrugated metal, etc.
18. ____ Prepare personnel to terminate all out-of-door operations at sounding of Civil Defense sirens. Exceptions being that immediate lifesaving operations would continue until completed or terminated at the discretion of the rescuing unit.
19. ____ Maintain telephone/radio communications with chain-of-command or Civil Defense EOC as appropriate.
20. ____ Monitor and exchange emergency information on the civil defense radio net as required.
21. ____ Be prepared to respond to problems caused by the following situations:
- a. ____ Power outage.
 - b. ____ Telephone outage.
 - c. ____ Loss of VHF radio communications.
 - d. ____ Water supply failure.
 - e. ____ Leaks in gas lines.
 - f. ____ Degraded garbage pickup and disposal services.
 - g. ____ Breakdown in the local radio/tv system.
 - h. ____ Civil Defense siren system failure.
 - i. ____ Structural fires.
 - j. ____ Broken windows and doors.
 - k. ____ Flooded indoor areas.
 - l. ____ Flooded outdoor areas.
 - m. ____ Blocked roads, streets, highways, culverts and drainage ditches.
 - n. ____ Vessel or vehicle accidents.
 - o. ____ Mass casualties.
 - p. ____ Oil or hazardous material spills.

22. ____ Follow-up on incomplete action items on Hurricane Checklist #2.
23. ____ Review the attached Wind Effects Guide. Observe wind condition indicators and initiate protective actions accordingly.
24. ____ Review Hurricane Checklist numbers 4 and 5, as required.

WIND EFFECTS GUIDE

WIND CONDITION INDICATORS	WIND SPEED/MILES PER HOUR
1. SMOKE RISES UP	0
2. SMOKE DRIFTS HORIZONTALLY	1-3
3. LEAVES RUSTLE, FLAGS STIR	4-7
4. LEAVES AND TWIGS MOVE	8-12
5. BRANCHES MOVE, FLAGS FLAP	13-18
6. SMALL TREES SWAY, FLAGS RIPPLE	19-24
7. LARGE BRANCHES MOVE, FLAGS BEAT	25-31
8. WHOLE TREES MOVE, FLAGS EXTEND	32-39
9. TWIGS BREAK, WALKING AND DRIVING ARE DIFFICULT, TIME TO GO TO SHELTER	39-46
10. SIGNS AND ANTENNAS BLOWN DOWN, LOOSE GRAVEL AND LIGHT OBJECTS BECOME DANGEROUS AND DAMAGING MISSILES	47-54
11. FLYING DEBRIS BREAKS WINDOWS, SHARDS OF SHATTERED GLASS LOOSE ROOFING MATERIALS AND BROKEN TREE LIMBS SAIL THROUGH THE AIR, TREES UPROOTED, CONSIDERABLE DAMAGE TO BUILDINGS AND COASTAL AREAS, STATE ROADS AND HIGHWAYS BECOME BLOCKED BY DOWNED POWER AND TELEPHONE POLES AND LINES	55-73
12. COUNTRYSIDE CAN BE DEVASTATED, EXPECT MAJOR DAMAGE AND DESTRUCTION TO WOOD FRAME	HURRICANE 74 OR ABOVE

STRUCTURES, UTILITY OUTAGES, EXTENSIVE FLOODING AND DISRUPTION TO OPERATIONS AND SERVICES	
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HURRICANE CHECKLIST #4
HURRICANE WARNING RESPONSE INSTRUCTIONS

Situation: Winds of 40 miles per hour (35 knots) or more have been reported or are occurring in specific areas within the State of Hawaii. Major damage to public and private property and disruption of electric, telephone, water, sewage and transportation services is expected.

EMERGENCY ACTIONS

- A. As necessary, observe out-of-door wind conditions and correlate with wind condition indicators on Wind Effects Guide.
- B. Do not wait for Civil Defense instructions via voice or sounding of the sirens. Expedite take shelter actions.
- C. Facilities in areas exposed to the 40 miles per hour (35 knots) winds or more shall:
 - 1. ____ Instruct employees and any unprotected people to seek shelter immediately and remain sheltered until Civil Defense announces the "All Clear." The "All Clear" is announced over the Emergency Broadcast System via local radio/tv networks.
 - 2. ____ Continue to monitor radio/tv networks for storm related information to include tornado and waterspout activity.
 - 3. ____ Continue to maintain log of activities.
 - 4. ____ Review and prepare to implement Hurricane Checklist #5.

HURRICANE CHECKLIST #5
HURRICANE "ALL CLEAR"

Situation: The hurricane "All Clear" message is announced by Civil Defense over the Emergency Broadcast System. Wind conditions allow for safe exit from buildings and travel is permitted on debris free roads, streets and highways. Exercise caution near coastal and flood prone areas until high seas and surf conditions permit safe exit and entry.

EMERGENCY ACTION

1. ____ Determine if buildings are safe from defects and hazards before recalling employees back to work.
2. ____ Initiate contact with employees. Determine if there were family injuries, property damage and any need for assistance.
3. ____ Recall emergency crews as conditions permit.
4. ____ Instruct emergency crews to exercise caution when transiting areas with downed power lines and flooded conditions.
5. ____ Recall and assign designated personnel to damage survey teams.
6. ____ Coordinate damage survey operations with Civil Defense EOC.
7. ____ Deploy damage survey teams.
8. ____ Ensure damage survey procedures (include use of available audio/visual and still photography to document damage and repair to facilities.
9. ____ Establish communications with the chain-of-command and the Civil Defense EOC, as appropriate.
10. ____ Report damage assessment to the Division Head.
11. ____ Restore communications between department operating facilities.
12. ____ Promptly report operating conditions of facilities and casualty status to the Division Head.
13. ____ Initiate and submit damage repair and facility recovery assessment claims to Civil Defense.
14. ____ Initiate repair and debris removal operations as required.
15. ____ Document cost for repair and debris removal operations.

16. ____ Keep the Division Head up to date on debris and damage repair operations.
17. ____ Respond to and log all requests for disaster assistance.
18. ____ Account for and submit disaster claims to State Civil Defense through the Division Head.
 - a. Claims shall cover reimbursement of expenses for overtime, meals, fuel, equipment, materials, and supplies committed to hurricane response and recovery operations.
 - b. Due date for submission of claims will be as directed by Civil Defense.
19. ____ Five (5) working days after the announcement of the hurricane “All Clear” message over the EBS, submit the following to the Division Head:
 - a. Log of operational activities.
 - b. A written after-actions report covering observations, deficiencies, and recommendations for corrective actions.
20. ____ Continue to maintain a log of on-going activities as relates to hurricane after action requirements.
21. ____ Continue to monitor radio/tv network for after-storm related information and instructions.
22. ____ Return to normal operations, as appropriate.
23. ____ If an employee is unable to report back to work:
 - a. Contact immediate supervisor.
 - b. Give reason why unable to report to work.
 - c. If phones are down, give reason to assigned personnel at pre-arranged pickup point, he/she in-turn notifies supervisor by radio.
 - d. Supervisor will make final decision.